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(FILE 'HOME' ENTERED AT 11:37:54 ON 03 MAY 2005)

FILE 'REGISTRY' ENTERED AT 11:38:00 ON 03 MAY 2005

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L1      STR
L2      SCR 2043
L3      50 SEA SSS SAM L1 AND L2
L4      19317 SEA SSS FUL L1 AND L2
          SAV TEM L4 NWA0950F0/A
L5      931 SEA ABB=ON PLU=ON L4 AND C3F60
L6      582 SEA ABB=ON PLU=ON L5 AND TRIFLUOROMETHYL
L7      STR
L8      STR L7
L9      30 SEA SUB=L4 SSS SAM L8
L10     654 SEA SUB=L4 SSS FUL L8
          SAV TEM NWA0950S0/A L10
          D QUE L10
L11     152 SEA ABB=ON PLU=ON L10 AND 1(W)2(W)2(W)2 (W)TETRAFLUOROETHYL
L12     168 SEA ABB=ON PLU=ON L6 AND 1(W)2(W)2(W)2 (W)TETRAFLUOROETHYL
L13     168 SEA ABB=ON PLU=ON L11 OR L12

FILE 'HCAPLUS' ENTERED AT 12:15:27 ON 03 MAY 2005
L14     138 SEA ABB=ON PLU=ON L13
          E SURFACTANT/CT
          E SURFACTANTS/CT
          E E3+ALL
L15     225071 SEA ABB=ON PLU=ON (SURFACTANTS+OLD, NT OR SURFACE ACTIVITY+OLD
          , NT OR SURFACTANT ADSORPTION OR PENETRATING AGENTS)/CT
L16     25 SEA ABB=ON PLU=ON L14 AND L15
          E AUDENAERT F/AU
L17     20 SEA ABB=ON PLU=ON ("AUDENAERT F"/AU OR "AUDENAERT FRANS"/AU
          OR "AUDENAERT FRANS A"/AU OR "AUDENAERT FRANS ALBERT"/AU)
          E DAMS R/AU
L18     238 SEA ABB=ON PLU=ON ("DAMS R"/AU OR "DAMS R A J"/AU)
          E DAMS RUDOL/AU
L19     41 SEA ABB=ON PLU=ON ("DAMS RUDOLF"/AU OR "DAMS RUDOLF J"/AU OR
          "DAMS RUDOLF J E A"/AU OR "DAMS RUDOLF JOZEF"/AU OR "DAMS
          RUDOLPH J"/AU)
          E TAN L/AU
L20     140 SEA ABB=ON PLU=ON ("TAN L"/AU OR "TAN L S"/AU OR "TAN L S
          K"/AU OR "TAN L SENG"/AU)
          E TAN LIAN/AU
L21     7 SEA ABB=ON PLU=ON ("TAN LIAN S"/AU OR "TAN LIAN SOON"/AU)
L22     2229 SEA ABB=ON PLU=ON (3M (1A) INNOV?)/CS, PA
L23     2 SEA ABB=ON PLU=ON L16 AND (L17 OR L18 OR L19 OR L20 OR L21
          OR L22)
L24     23 SEA ABB=ON PLU=ON L16 NOT L23

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=> b reg

FILE 'REGISTRY' ENTERED AT 12:21:47 ON 03 MAY 2005

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STRUCTURE FILE UPDATES: 2 MAY 2005 HIGHEST RN 849658-68-0

DICTIONARY FILE UPDATES: 2 MAY 2005 HIGHEST RN 849658-68-0

New CAS Information Use Policies, enter HELP USAGETERMS for details.

TSCA INFORMATION NOW CURRENT THROUGH JANUARY 18, 2005

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*

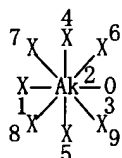
Search done by Noble Jarrell

* The CA roles and document type information have been removed from *
 * the IDE default display format and the ED field has been added, *
 * effective March 20, 2005. A new display format, IDERL, is now *
 * available and contains the CA role and document type information. *
 *

Crossover limits have been increased. See HELP CROSSOVER for details.

Experimental and calculated property data are now available. For more
 information enter HELP PROP at an arrow prompt in the file or refer
 to the file summary sheet on the web at:
<http://www.cas.org/ONLINE/DBSS/registryss.html>

=> d que sta l13
 L1 STR

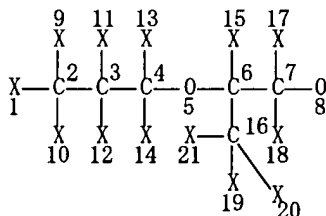


NODE ATTRIBUTES:
 DEFAULT MLEVEL IS ATOM
 DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
 RING(S) ARE ISOLATED OR EMBEDDED
 NUMBER OF NODES IS 9

STEREO ATTRIBUTES: NONE

L2 SCR 2043
 L4 19317 SEA FILE=REGISTRY SSS FUL L1 AND L2
 L5 931 SEA FILE=REGISTRY ABB=ON PLU=ON L4 AND C3F6O
 L6 582 SEA FILE=REGISTRY ABB=ON PLU=ON L5 AND TRIFLUOROMETHYL
 L8 STR



NODE ATTRIBUTES:
 DEFAULT MLEVEL IS ATOM
 DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
 RING(S) ARE ISOLATED OR EMBEDDED
 NUMBER OF NODES IS 21

STEREO ATTRIBUTES: NONE

L10 654 SEA FILE=REGISTRY SUB=L4 SSS FUL L8
 L11 152 SEA FILE=REGISTRY ABB=ON PLU=ON L10 AND 1(W)2(W)2(W)2
 (W)TETRAFLUOROETHYL
 L12 168 SEA FILE=REGISTRY ABB=ON PLU=ON L6 AND 1(W)2(W)2(W)2
 (W)TETRAFLUOROETHYL
 L13 168 SEA FILE=REGISTRY ABB=ON PLU=ON L11 OR L12

=> b hcap
 FILE 'HCAPLUS' ENTERED AT 12:21:59 ON 03 MAY 2005
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FILE COVERS 1907 - 3 May 2005 VOL 142 ISS 19
FILE LAST UPDATED: 2 May 2005 (20050502/ED)

New CAS Information Use Policies, enter HELP USAGETERMS for details.

This file contains CAS Registry Numbers for easy and accurate substance identification.

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L23 ANSWER 1 OF 2 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 2003:417794 HCAPLUS
DN 139:7655
ED Entered STN: 01 Jun 2003
TI Compositions for aqueous delivery of fluorinated silanes
IN Terrazas, Michael S.; Pellerite, Mark J.; Dams, Rudolf J.
PA 3M Innovative Properties Company, USA
SO PCT Int. Appl., 43 pp.
CODEN: PIXXD2
DT Patent
LA English
IC ICM C08G065-336
ICS C08G077-00; C09D183-00
CC 37-3 (Plastics Manufacture and Processing)
Section cross-reference(s): 42
FAN.CNT 1

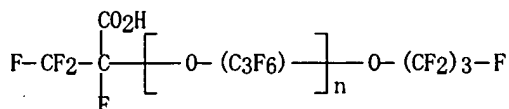
| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|----------|-----------------|----------|
| PI WO 2003044075 | A1 | 20030530 | WO 2002-US34278 | 20021025 |
| W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW | | | | |
| RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG | | | | |
| US 6592659 | B1 | 20030715 | US 2001-2543 | 20011115 |
| EP 1444290 | A1 | 20040811 | EP 2002-776307 | 20021025 |
| R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, SK | | | | |
| JP 2005509708 | T2 | 20050414 | JP 2003-545709 | 20021025 |
| PRAI US 2001-2543 | A | 20011115 | | |
| WO 2002-US34278 | W | 20021025 | | |

CLASS

| PATENT NO. | CLASS | PATENT FAMILY CLASSIFICATION CODES |
|---------------|-------|---------------------------------------------------------------------------------------------------------------------------------------------------------|
| WO 2003044075 | ICM | C08G065-336 |
| | ICS | C08G077-00; C09D183-00 |
| US 6592659 | NCL | 106/287.130; 106/287.140; 106/287.270; 427/387.000; 428/421.000; 428/447.000 |
| JP 2005509708 | FTERM | 4H020/BA11; 4H020/BA21; 4H020/BA23; 4H020/BA36; 4J002/BQ002; 4J002/CH052; 4J002/CP081; 4J002/CP181; 4J002/EF006; 4J002/EN006; 4J002/EV286; 4J002/FD312; |

4J002/FD316; 4J002/GH01; 4J005/AA04; 4J005/BD05;
 4J005/BD08; 4J038/CG032; 4J038/CG142; 4J038/CH262;
 4J038/CJ252; 4J038/DF011; 4J038/DF012; 4J038/DL051;
 4J038/DL061; 4J038/DL161; 4J038/GA02; 4J038/GA06;
 4J038/GA09; 4J038/GA12; 4J038/GA13; 4J038/HA156;
 4J038/KA09; 4J038/MA07; 4J038/MA08; 4J038/MA09;
 4J038/NA07

- AB The invention relates to a dilutable, nonaq. concentrate and an aqueous dilution used for aqueous delivery of fluorinated silanes to a substrate, a method of treating a substrate with the aqueous dilution composition to render it oil and water repellent, and articles having coatings made from the aqueous dilution. The aqueous dilution may be coated on a substrate to provide a durable coating. Thus, shaking 5.0 g a 10% solution of Krytox 157FS(L) (carboxy group-containing fluoropolymer) ammonium salt in MeOH with 1.0 g trimethoxysilylpropylamido group-terminated perfluorinated polyether (I) gave a single-phase liquid containing 16.7% I. Diluting 0.5 g the concentrated solution above with 10.0 g water gave a clear dilution with no precipitation
- ST silane deriv perfluorinated polyether aq conc diln surface treatment
- IT Ceramics
 Coating materials
 (dilutable concs. for aqueous delivery of fluorinated silanes)
- IT Glass, miscellaneous
 RL: MSC (Miscellaneous)
 (dilutable concs. for aqueous delivery of fluorinated silanes)
- IT **Surfactants**
 (fluorosurfactants; dilutable concs. for aqueous delivery of fluorinated silanes)
- IT Polyethers, uses
 RL: TEM (Technical or engineered material use); USES (Uses)
 (perfluoro, silylated; dilutable concs. for aqueous delivery of fluorinated silanes)
- IT Fluoropolymers, uses
 RL: TEM (Technical or engineered material use); USES (Uses)
 (polyether-, perfluoro, silylated; dilutable concs. for aqueous delivery of fluorinated silanes)
- IT 101947-16-4 220864-25-5 233676-28-3
 RL: TEM (Technical or engineered material use); USES (Uses)
 (surface treatment; dilutable concs. for aqueous delivery of fluorinated silanes)
- IT 30136-13-1, Dowanol PnP 68259-10-9 **126600-08-6**, KRYTOX 157FS(L) ammonium salt
 RL: MOA (Modifier or additive use); USES (Uses)
 (surfactant; dilutable concs. for aqueous delivery of fluorinated silanes)
- RE. CNT 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD
- RE
 (1) Du Pont; EP 0611771 A 1995 HCAPLUS
 (2) Du Pont; WO 9523804 A 1995 HCAPLUS
 (3) Minnesota Mining & Mfg; EP 0611771 A 1994 HCAPLUS
 (4) Minnesota Mining & Mfg; EP 0611771 A 1997 HCAPLUS
 (5) Minnesota Mining & Mfg; WO 9723432 A 1997 HCAPLUS
- IT **126600-08-6**, KRYTOX 157FS(L) ammonium salt
 RL: MOA (Modifier or additive use); USES (Uses)
 (surfactant; dilutable concs. for aqueous delivery of fluorinated silanes)
- RN 126600-08-6 HCAPLUS
- CN Poly[oxy(trifluoro(trifluoromethyl)-1,2-ethanediyl)], α -(1-carboxy-1,2,2,2-tetrafluoroethyl)- ω -(heptafluoropropoxy)-, ammonium salt (9CI) (CA INDEX NAME)



● NH₃

L23 ANSWER 2 OF 2 HCAPLUS COPYRIGHT 2005 ACS on STN

AN 2002:849502 HCAPLUS

DN 137:354443

ED Entered STN: 08 Nov 2002

TI Dispersant in non-polar solvent

IN Rao, Prabhakara S.

PA 3M Innovative Properties Company, USA

SO PCT Int. Appl., 19 pp.

CODEN: PIXXD2

DT Patent

LA English

IC ICM B01F017-00

ICS C08J003-09; C08F002-14; G02F001-167

CC 42-7 (Coatings, Inks, and Related Products)

FAN. CNT 1

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|-----------------|----------|
| PI WO 2002087738 | A1 | 20021107 | WO 2002-US2343 | 20020125 |
| W: | AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM | | | |
| RW: | GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG | | | |
| US 2003018111 | A1 | 20030123 | US 2001-837784 | 20010418 |
| US 6562889 | B2 | 20030513 | | |
| EP 1392421 | A1 | 20040303 | EP 2002-704258 | 20020125 |
| R: | AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR | | | |
| JP 2004536899 | T2 | 20041209 | JP 2002-585072 | 20020125 |
| PRAI US 2001-837784 | A | 20010418 | | |
| WO 2002-US2343 | W | 20020125 | | |

CLASS

| PATENT NO. | CLASS | PATENT FAMILY CLASSIFICATION CODES |
|---------------|-------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| WO 2002087738 | ICM | B01F017-00 |
| | ICS | C08J003-09; C08F002-14; G02F001-167 |
| US 2003018111 | NCL | 524/366.000; 524/319.000 |
| | ECLA | B01F017/00H; C08J003/09; G02F001/167 |
| JP 2004536899 | FTERM | 4D077/AA01; 4D077/AB03; 4D077/AC05; 4D077/DD29Y; 4D077/DE10Y; 4D077/DE35Y; 4J002/BC07W; 4J002/BG04W; 4J002/CH02X; 4J002/EB066; 4J002/FD090; 4J002/FD31X; 4J002/GQ00 |

AB The present invention provides a stable, non-film-forming dispersion comprising (a) dispersed particles, (b) a liquid non-polar solvent which is preferably fluorinated, and (c) a dispersant selected from the group consisting of highly fluorinated polyethers, having an atomic ratio of carbon to oxygen of between 2 and 4 inclusive, and bearing at least one polar functional group which is preferably an ionizable group such as a carboxylic acid group. The dispersants are suitable for dispersing pigments in paints.

ST pigment dispersant non polar solvent

IT Perfluoro compounds

RL: TEM (Technical or engineered material use); USES (Uses)
(C5-18, dispersant in non-polar solvent for pigments)

IT Carbon black, uses

RL: TEM (Technical or engineered material use); USES (Uses)
(Raven 1200; dispersant in non-polar solvent for pigments)

IT **Dispersing agents**

Paints

Pigments, nonbiological

(dispersant in non-polar solvent for pigments)

IT Polyethers, uses

RL: TEM (Technical or engineered material use); USES (Uses)
(fluorinated; dispersant in non-polar solvent for pigments)

IT Solvents

(nonpolar, fluorinated; dispersant in non-polar solvent for pigments)

IT Alkanes, uses
 RL: TEM (Technical or engineered material use); USES (Uses)
 (perfluorinated, solvent; dispersant in non-polar solvent for pigments)

IT 147-14-8, Spectra Pac C Blue 15:4
 RL: TEM (Technical or engineered material use); USES (Uses)
 (Cyan PB, Spectra Pac C Blue 15:4; dispersant in non-polar solvent for pigments)

IT 5567-15-7
 RL: TEM (Technical or engineered material use); USES (Uses)
 (PY 83 Yellow; dispersant in non-polar solvent for pigments)

IT 98-08-8, Oxsol 2000 106-91-2, Glycidyl methacrylate 1047-16-1, Monastral Red B-RT 796D 1319-73-9, Methylstyrene 5888-33-5, Isobornyl acrylate 26570-48-9, Polyethylene glycol diacrylate 32724-62-2, Solvent Blue 97 51601-43-5, Zirconium Ten-Cem 51798-33-5, Krytox 157FSH 90317-74-1, Krytox 157FSL 106441-58-1, Krytox 157FSM
 RL: TEM (Technical or engineered material use); USES (Uses)
 (dispersant in non-polar solvent for pigments)

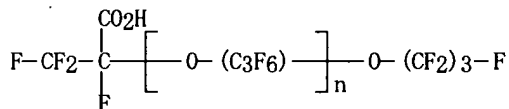
RE. CNT 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE
 (1) John, I; WO 9967297 A 1999 HCAPLUS
 (2) Nippon Mektron Kk; JP 62200335 A
 (3) Wei-Hsin, H; US 5573711 A 1996 HCAPLUS

IT 90317-74-1, Krytox 157FSL
 RL: TEM (Technical or engineered material use); USES (Uses)
 (dispersant in non-polar solvent for pigments)

RN 90317-74-1 HCAPLUS

CN Poly[oxy(trifluoro(trifluoromethyl)-1,2-ethanediyl)], α -(1-carboxy-1,2,2,2-tetrafluoroethyl)- ω -(heptafluoropropoxy)- (9CI) (CA INDEX NAME)



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L24 ANSWER 1 OF 23 HCAPLUS COPYRIGHT 2005 ACS on STN

AN 2005:101411 HCAPLUS

DN 142:337067

ED Entered STN: 07 Feb 2005

TI Polymer encapsulation of fine particles by a supercritical antisolvent process

AU Wang, Yulu; Pfeffer, Robert; Dave, Rajesh; Enick, Robert

CS New Jersey Center for Engineered Particulates, New Jersey Institute of Technology, Newark, NJ, 07102, USA

SO AIChE Journal (2005), 51(2), 440-455
 CODEN: AICEAC; ISSN: 0001-1541

PB John Wiley & Sons, Inc.

DT Journal

LA English

CC 37-6 (Plastics Manufacture and Processing)
 Section cross-reference(s): 46

AB Coating and encapsulation of fine particles with polymer using a supercrit. antisolvent (SAS) coating process was investigated in this research. Synthesized submicron silica particles were used as host particles and poly(lactide-co-glycolide) (PLGA), a biodegradable polymer used for controlled release of drugs, was chosen as the coating material. In the SAS coating process a suspension of silica particles in an acetone-polymer solution was sprayed through a capillary nozzle into supercrit. (SC) CO₂, which acts as an antisolvent for the acetone. A rapid mutual diffusion between the SC CO₂ and the acetone causes supersatn. of the polymer solution, leading to nucleation and precipitation of the polymer to encapsulate the silica particles. The operating parameters that have an effect on the coating process, such as polymer to particle weight ratio, polymer concentration, temperature, pressure, flow rate of polymer solution,

and the addition of a SC CO2 soluble surfactant, were systematically studied. It is shown that the polymer to silica ratio and the polymer concentration are critical for the successful encapsulation of silica particles with min. agglomeration.

- ST lactide glycolide copolymer silica particle encapsulation surfactant supercrit antisolvent
- IT Solvents
(antisolvents; poly(lactide-glycolide) encapsulation of fine silica particles by supercrit. antisolvent process)
- IT Flow
(effect on poly(lactide-glycolide) encapsulation of fine silica particles by supercrit. antisolvent process)
- IT Polyoxyalkylenes, uses
RL: NUU (Other use, unclassified); USES (Uses)
(fluorine-containing, surfactant; for poly(lactide-glycolide) encapsulation of fine silica particles by supercrit. antisolvent process)
- IT **Surfactants**
(for poly(lactide-glycolide) encapsulation of fine silica particles by supercrit. antisolvent process)
- IT Agglomeration
Encapsulation
Particle size
Particle size distribution
Particles
Solubility
Supercritical fluids
Ternary phase diagram
(poly(lactide-glycolide) encapsulation of fine silica particles by supercrit. antisolvent process)
- IT Polyesters, properties
RL: PEP (Physical, engineering or chemical process); PRP (Properties); PYP (Physical process); PROC (Process)
(poly(lactide-glycolide) encapsulation of fine silica particles by supercrit. antisolvent process)
- IT Fluoropolymers, uses
RL: NUU (Other use, unclassified); USES (Uses)
(polyoxyalkylene-, surfactant; for poly(lactide-glycolide) encapsulation of fine silica particles by supercrit. antisolvent process)
- IT Fluoropolymers, uses
RL: NUU (Other use, unclassified); USES (Uses)
(surfactant; for poly(lactide-glycolide) encapsulation of fine silica particles by supercrit. antisolvent process)
- IT 7631-86-9, Silica, properties 26780-50-7, Resomer RG 502
RL: PEP (Physical, engineering or chemical process); PRP (Properties); PYP (Physical process); PROC (Process)
(poly(lactide-glycolide) encapsulation of fine silica particles by supercrit. antisolvent process)
- IT 67-64-1, Acetone, uses
RL: NUU (Other use, unclassified); USES (Uses)
(solvent; poly(lactide-glycolide) encapsulation of fine silica particles by supercrit. antisolvent process)
- IT 124-38-9, Carbon dioxide, uses
RL: NUU (Other use, unclassified); USES (Uses)
(supercrit. fluid; poly(lactide-glycolide) encapsulation of fine silica particles by supercrit. antisolvent process)
- IT 74049-08-4, 3, 3, 4, 4, 5, 5, 6, 6, 7, 7, 8, 8, 9, 9, 10, 10, 10-Heptadecafluorodecyl acrylate homopolymer **90317-74-1**, Krytox 157FSL 97002-50-1, 3, 3, 4, 4, 5, 5, 6, 6, 7, 7, 8, 8, 9, 9, 10, 10, 10-Heptadecafluorodecyl acrylate-styrene copolymer
RL: NUU (Other use, unclassified); USES (Uses)
(surfactant; for poly(lactide-glycolide) encapsulation of fine silica particles by supercrit. antisolvent process)

RE. CNT 37 THERE ARE 37 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

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- (2) Canelas, D; Macromolecules 1998, V31, P6794 HCAPLUS
- (3) Chang, C; AIChE J 1989, V35, P1876 HCAPLUS
- (4) Chang, C; AIChE J 1990, V36, P939 HCAPLUS
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- (26) Stober, W; J Colloid Interface Sci 1968, V26, P62
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- (28) Tom, J; J Supercrit Fluids 1994, V7, P9 HCAPLUS
- (29) Tu, L; Powder Technol 2002, V126, P134 HCAPLUS
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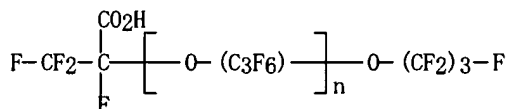
IT 90317-74-1, Krytox 157FSL

RL: NUU (Other use, unclassified); USES (Uses)

(surfactant; for poly(lactide-glycolide) encapsulation of fine silica particles by supercrit. antisolvent process)

RN 90317-74-1 HCAPLUS

CN Poly[oxy(trifluoro(trifluoromethyl)-1,2-ethanediyl)], α -(1-carboxy-1,2,2,2-tetrafluoroethyl)- ω -(heptafluoropropoxy)- (9CI) (CA INDEX NAME)



L24 ANSWER 2 OF 23 HCAPLUS COPYRIGHT 2005 ACS on STN

AN 2004:1154601 HCAPLUS

DN 142:76555

ED Entered STN: 30 Dec 2004

TI Process for recovery of surfactants

IN Nagai, Takabumi; Fujii, Kazuhisa; Asai, Hideaki

PA Daikin Industries, Ltd., Japan

SO PCT Int. Appl., 26 pp.

CODEN: PIXXD2

DT Patent

LA Japanese

IC ICM B01J015-00

ICS B01J003-00

CC 45-5 (Industrial Organic Chemicals, Leather, Fats, and Waxes)

Section cross-reference(s): 46, 74, 76

FAN.CNT 1

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------------------------------------------------------------------------------------------------------------------------------------|------|----------|-----------------|----------|
| PI WO 2004112952 | A1 | 20041229 | WO 2004-JP8967 | 20040618 |
| W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, | | | | |

GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC,
 LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI,
 NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY,
 TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW
 RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM,
 AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK,
 EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE,
 SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE,
 SN, TD, TG

PRAI JP 2003-176139 A 20030620

CLASS

PATENT NO. CLASS PATENT FAMILY CLASSIFICATION CODES

WO 2004112952 ICM B01J015-00
 ICS B01J003-00

AB A process for recovering a surfactant (e.g., a fluorosurfactant) from a H₂O-CO₂ system containing ≥1 surfactant comprises bringing the system into contact with a dehydrating agent to thereby remove the water and recover the surfactant. The process is characterized by circulating a mixed system containing CO₂, a CO₂-compatible surfactant and/or co-solvent, and a subject of removal in a circulation line provided with a selective-removal device for the subject of removal to remove selectively the subject of removal taken in the surfactant and/or the co-solvent. The surfactant-containing system is used in cleaning or drying of semiconductor wafers, photoresists, precision devices, clothing, etc.

ST fluorosurfactant recovery carbon dioxide water system; photoresist cleaning surfactant recovery carbon dioxide water system

IT Supercritical fluids
 (carbon dioxide; process for recovery of surfactants from water-carbon dioxide system)

IT Molecular sieves
 (dehydrating agent; process for recovery of surfactants from water-carbon dioxide system)

IT Silica gel, uses
 RL: NUU (Other use, unclassified); USES (Uses)
 (dehydrating agent; process for recovery of surfactants from water-carbon dioxide system)

IT **Surfactants**
 (fluorosurfactants; process for recovery of surfactants from water-carbon dioxide system)

IT Semiconductor materials
 (process for recovery of surfactants from water-carbon dioxide system)

IT Textiles
 (process for recovery of surfactants from water-carbon dioxide system in cleaning of cloth)

IT Photoresists
 (process for recovery of surfactants from water-carbon dioxide system in cleaning of photoresists)

IT 39288-70-5, Amberlite IR 122 69431-33-0, Amberlite IR 400
 RL: NUU (Other use, unclassified); USES (Uses)
 (adsorbents; process for recovery of surfactants from water-carbon dioxide system)

IT 124-38-9, Carbon dioxide, uses
 RL: NUU (Other use, unclassified); USES (Uses)
 (process for recovery of surfactants from water-carbon dioxide system)

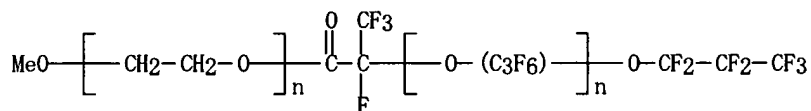
IT **37208-51-8P** 62037-80-3P 340034-67-5P
 RL: PEP (Physical, engineering or chemical process); PUR (Purification or recovery); PYP (Physical process); PREP (Preparation); PROC (Process)
 (process for recovery of surfactants from water-carbon dioxide system)

RE. CNT 9 THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

- (1) 3m Innovative Properties Co; WO 200036272 A1 2002
- (2) 3m Innovative Properties Co; JP 2002543241 A 2002
- (3) 3m Innovative Properties Co; US 6235701 B1 2002 HCAPLUS
- (4) Director General Of National Institute Of Advanced Industrial Science And Technology; JP 2001247519 A 2001 HCAPLUS
- (5) Director General Of National Institute Of Advanced Industrial Science And Technology; US 200125121 A1 2001
- (6) Japan Tobacco Inc; JP 06-114202 A 1994 HCAPLUS
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(8) Nippon Telegraph And Telephone Corp; US 2002132192 A1 2000 HCAPLUS
 (9) Nippon Telegraph And Telephone Corp; EP 992852 A2 2000 HCAPLUS
 IT **37208-51-8P**
 RL: PEP (Physical, engineering or chemical process); PUR (Purification or recovery); PYP (Physical process); PREP (Preparation); PROC (Process)
 (process for recovery of surfactants from water-carbon dioxide system)
 RN 37208-51-8 HCAPLUS
 CN Poly[oxy(trifluoro(trifluoromethyl)-1,2-ethanediyl)], α -(1-carboxy-1,2,2,2-tetrafluoroethyl)- ω -(heptafluoropropoxy)-, ester with α -hydro- ω -methoxypoly(oxy-1,2-ethanediyl) (9CI) (CA INDEX NAME)



L24 ANSWER 3 OF 23 HCAPLUS COPYRIGHT 2005 ACS on STN
 AN 2004:551036 HCAPLUS
 DN 141:90923
 ED Entered STN: 09 Jul 2004
 TI Dry cleaning process using composition containing organic dry cleaning solvents and acid surfactants
 IN Evers, Johannes Maria Wilhelmus; Goedhart, Machiel; Kerpels, Freddie; Van Kralingen, Cornelis Gerhard; Overdeest, Pieter Everhardus Maria; Reinhoudt, Hank Robert; Vrieswijk, Karin
 PA Unilever N.V., Neth.; Unilever PLC; Hindustan Lever Limited
 SO PCT Int. Appl., 43 pp.
 CODEN: PIXXD2
 DT Patent
 LA English
 IC ICM D06L001-12
 ICS D06L001-22
 CC 46-5 (Surface Active Agents and Detergents)
 FAN.CNT 1

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|-----------------|----------|
| PI WO 2004057093 | A1 | 20040708 | WO 2003-EP13573 | 20031201 |
| W: | AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, VZ, VC, VN, YU, ZA, ZM, ZW | | | |
| RW: | BW, GH, GM, KE, LU, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG | | | |

PRAI EP 2002-80466 A 20021219

CLASS

| PATENT NO. | CLASS | PATENT FAMILY CLASSIFICATION CODES |
|---------------|-------|------------------------------------|
| WO 2004057093 | ICM | D06L001-12 |
| | ICS | D06L001-22 |

AB A dry cleaning process for in-home dry cleaning comprises a dry cleaning step of contacting a laundry article stained with particulate soil with a dry cleaning composition wherein the liquor to cloth ratio (weight/weight) (LCR) is at most 20, and wherein the composition comprises (A) a non-flammable, non-chlorine containing organic dry cleaning solvent; (B) a cleaning effective amount an acid surfactant. Thus, a low-aqueous dry cleaning composition was prepared by mixing HFE 7200 (Et nonafluorobutyl ether) with 0.1 wt% of Krytox 157FSL (fluorosurfactant) and 0.25 wt% of water. Then, a dry cleaning process was carried out by contracting laundry articles with the dry cleaning compns. and agitated for 15 min at 20° using a liquid to cloth ratio of 13.

ST dry cleaning process compn org solvent acid surfactant

IT **Surfactants**

(anionic; production of dry cleaning process using composition containing organic dry cleaning solvents and acid surfactants)

IT **Surfactants**

(fluorosurfactants; production of dry cleaning process using composition containing organic dry cleaning solvents and acid surfactants)

IT Cleaning solvents

Dry cleaning

(production of dry cleaning process using composition containing organic dry cleaning solvents and acid surfactants)

IT 714252-37-6, Crodafos 810A

RL: TEM (Technical or engineered material use); USES (Uses)

(anionic surfactant; production of dry cleaning process using composition containing organic dry cleaning solvents and acid surfactants)

IT 141-62-8, Decamethyl tetrasiloxane 141-63-9, Dodecamethyl pentasiloxane

541-02-6, Decamethyl cyclopentasiloxane 556-67-2,

Octamethylcyclotetrasiloxane 51000-94-3, Decafluoropentane

163702-05-4, HFE 7200 163702-07-6, Nonafluorobutyl methyl ether

219484-64-7, HFE 7100

RL: TEM (Technical or engineered material use); USES (Uses)

(dry cleaning solvent; production of dry cleaning process using composition containing organic dry cleaning solvents and acid surfactants)

IT 90317-74-1, Krytox 157FSL 99637-22-6, Zonyl UR

RL: TEM (Technical or engineered material use); USES (Uses)

(fluorosurfactant; production of dry cleaning process using composition containing organic dry cleaning solvents and acid surfactants)

RE. CNT 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

(1) 3m Innovative Properties Co; WO 0036206 A 2000 HCAPLUS

(2) Gen Electric; WO 0246517 A 2002

(3) Gen Electric; WO 0250366 A 2002

(4) Giampalmi, J; US 3689211 A 1972

(5) Unilever Plc; WO 02053824 A 2002

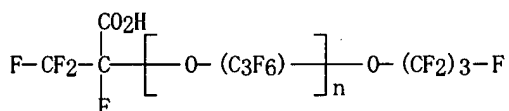
IT 90317-74-1, Krytox 157FSL

RL: TEM (Technical or engineered material use); USES (Uses)

(fluorosurfactant; production of dry cleaning process using composition containing organic dry cleaning solvents and acid surfactants)

RN 90317-74-1 HCAPLUS

CN Poly[oxy(trifluoro(trifluoromethyl)-1,2-ethanediyl)], α -(1-carboxy-1,2,2,2-tetrafluoroethyl)- ω -(heptafluoropropoxy)- (9CI) (CA INDEX NAME)



L24 ANSWER 4 OF 23 HCAPLUS COPYRIGHT 2005 ACS on STN

AN 2004:466835 HCAPLUS

DN 141:38453

ED Entered STN: 10 Jun 2004

TI Preparation of fluorine-containing calixarenes, compounds with carbonaceous materials, and their uses

IN Furukawa, Miho; Yasuda, Naoki; Idekura, Takateru

PA Ajinomoto Co., Inc., Japan

SO Jpn. Kokai Tokkyo Koho, 38 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM C07C043-23

ICS C07F009-659

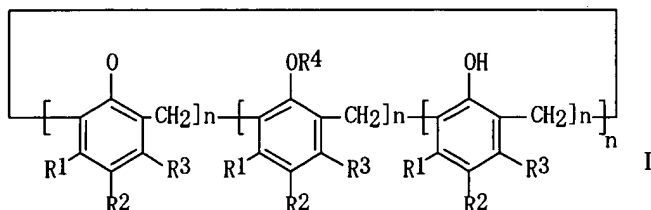
CC 25-29 (Benzene, Its Derivatives, and Condensed Benzenoid Compounds)

FAN. CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|-------|----------------|------|----------|-----------------|----------|
| PI | JP 2004161696 | A2 | 20040610 | JP 2002-330692 | 20021114 |
| PRAI | JP 2002-330692 | | 20021114 | | |
| CLASS | | | | | |

| PATENT NO. | CLASS | PATENT FAMILY CLASSIFICATION CODES |
|---------------|-------|---------------------------------------------------------------------------------------|
| JP 2004161696 | ICM | C07C043-23 |
| | ICS | C07F009-659 |
| JP 2004161696 | FTERM | 4H006/AB90; 4H006/GN05; 4H006/GP03; 4H050/AA01; 4H050/AA03; 4H050/AB90; 4H050/AC40 |

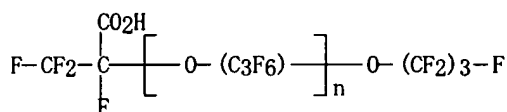
GI



I

- AB Calixarenes, useful for dispersing or solubilizing carbonaceous materials, e.g. fullerenes, C nanotubes, etc., in fluorocarbon solvents and lubricants, have the following characteristics: (A) ≥ 1 of the phenolic OH groups is unsubstituted and (B) ≥ 1 of the phenolic OH groups is substituted with $C \geq 10$ group having ≥ 1 fluoroalkyleneoxy and/or fluorohydrocarbyl. Also claimed are compds. of the calixarenes with carbonaceous materials, and dispersing agents, solubilizing agents, and wetting agents containing the calixarenes. Demnum SA 1 [CF₃(C₃F₆O)_k(CF₂)₂CH₂OH] was reacted with NaH in THF and the reaction mixture was further treated with hexachlorocyclotriphosphazene and 4-tert-butyl-calix(8)arene to give I [R₁ = R₃ = H; R₂ = CMe₃, R₄ = II [1 of A1-A5 = OCH₂(CF₂)₂(OC₃F₆)₁₂.7CF₃ and the others = Cl], m = 1, n = approx. 0, l = 7, m + n + l = 8] (III). Twenty parts of III was dissolved in a mixture of 160 parts SR-Solvent [C₆H₄(CF₃)₂] and 40 parts Vertrel XF (C₅H₂F₁₀), and the solution was treated with a toluene solution of 0.2 part C₆₀ at room temperature for 20 min to give compound of C₆₀ with III. The compound was dissolved in a mixture of 160 parts SR-Solvent and 40 parts Vertrel XF to give a precipitant-free transparent solution
- ST fluorine contg calixarene prepn dispersing agent; fullerene solubilizer fluorine cong calixarene; wetting agent fluorine contg calixarene; perfluoropolyether calixarene reaction product prepn dispersant; hexachlorocyclotriphosphazene reaction product perfluoropolyether calixarene solubilizer C₆₀
- IT Metacyclophanes
RL: NUU (Other use, unclassified); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent); USES (Uses) (calixarenes; preparation of F-containing calixarenes, compds. with carbonaceous materials, and their uses as dispersing agents, solubilizing agents, and wetting agents)
- IT Nanotubes
(carbon, dispersion or solubilization of; preparation of F-containing calixarenes, compds. with carbonaceous materials, and their uses as dispersing agents, solubilizing agents, and wetting agents)
- IT Fullerenes
RL: MSC (Miscellaneous)
(dispersion or solubilization of; preparation of F-containing calixarenes, compds. with carbonaceous materials, and their uses as dispersing agents, solubilizing agents, and wetting agents)
- IT Carbon fibers, preparation
RL: SPN (Synthetic preparation); PREP (Preparation)
(dispersion or solubilization of; preparation of F-containing calixarenes, compds. with carbonaceous materials, and their uses as dispersing agents, solubilizing agents, and wetting agents)
- IT Polyoxyalkylenes, preparation
RL: NUU (Other use, unclassified); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(fluorine-containing, Fomblin Z-DOL, reaction products; preparation of F-containing calixarenes, compds. with carbonaceous materials, and their uses as dispersing agents, solubilizing agents, and wetting agents)

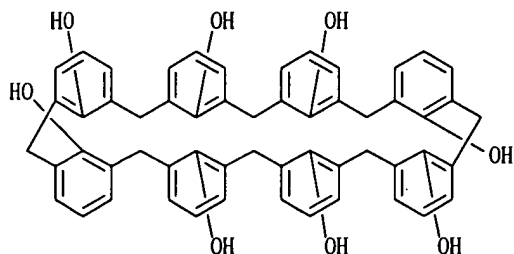
- IT Fluoropolymers, preparation
 RL: NUU (Other use, unclassified); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
 (polyoxyalkylene-, Fomblin Z-DOL, reaction products; preparation of F-containing calixarenes, compds. with carbonaceous materials, and their uses as dispersing agents, solubilizing agents, and wetting agents)
- IT **Dispersing agents**
 Solubilizers
Wetting agents
 (preparation of F-containing calixarenes, compds. with carbonaceous materials, and their uses as dispersing agents, solubilizing agents, and wetting agents)
- IT Inclusion compounds
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (preparation of F-containing calixarenes, compds. with carbonaceous materials, and their uses as dispersing agents, solubilizing agents, and wetting agents)
- IT 7782-42-5, Graphite, miscellaneous
 RL: MSC (Miscellaneous)
 (dispersion or solubilization of; preparation of F-containing calixarenes, compds. with carbonaceous materials, and their uses as dispersing agents, solubilizing agents, and wetting agents)
- IT 7440-44-0, Carbon, miscellaneous
 RL: MSC (Miscellaneous)
 (nanotubes, dispersion or solubilization of; preparation of F-containing calixarenes, compds. with carbonaceous materials, and their uses as dispersing agents, solubilizing agents, and wetting agents)
- IT 98-17-9DP, α, α, α -Trifluoro-m-cresol, reaction products with calixarenes, hexachlorocyclotriphosphazene, and perfluoropolyethers 940-71-6DP, Hexachlorocyclotriphosphazene, reaction products with perfluoropolyethers, calixarenes, and optionally (trifluoromethyl)phenol 68971-82-4DP, 4-tert-Butylcalix(8)arene, reaction products with hexachlorocyclotriphosphazene, perfluoropolyethers, and optionally (trifluoromethyl)phenol 146349-51-1DP, Demnum SA 1, reaction products with hexachlorocyclotriphosphazene and calixarenes **701909-00-4P**, Krytox 157FS(L) ester with calix(8)arene
 RL: NUU (Other use, unclassified); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
 (preparation of F-containing calixarenes, compds. with carbonaceous materials, and their uses as dispersing agents, solubilizing agents, and wetting agents)
- IT 99685-96-8DP, C60 Fullerene, compds. with F-containing calix(8)arene compds.
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (preparation of F-containing calixarenes, compds. with carbonaceous materials, and their uses as dispersing agents, solubilizing agents, and wetting agents)
- IT **701909-00-4P**, Krytox 157FS(L) ester with calix(8)arene
 RL: NUU (Other use, unclassified); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
 (preparation of F-containing calixarenes, compds. with carbonaceous materials, and their uses as dispersing agents, solubilizing agents, and wetting agents)
- RN 701909-00-4 HCAPLUS
 CN Poly[oxy(trifluoro(trifluoromethyl)-1,2-ethanediyl)], α -(1-carboxy-1,2,2,2-tetrafluoroethyl)- ω -(heptafluoropropoxy)-, ester with nonacyclo[43.3.1.13.7.19.13.115.19.121.25.127.31.133.37.139.43]hexapentacota-1(49), 3,5,7(56), 9,11,13(55), 15,17,19(54), 21,23,25(53), 27,29,31(52), 33, 35,37(51), 39,41,43(50), 45,47-tetracosane-49,50,51,52,53,54,55,56-octol (9CI) (CA INDEX NAME)
- CM 1
- CRN 90317-74-1
 CMF (C3 F6 O)_n C6 H F11 O3
 CCI IDS, PMS



CM 2

CRN 82452-93-5

CMF C56 H48 O8



- L24 ANSWER 5 OF 23 HCAPLUS COPYRIGHT 2005 ACS on STN
 AN 2004:86949 HCAPLUS
 DN 140:341148
 ED Entered STN: 03 Feb 2004
 TI Estimation of foam forming properties and surface tension of
 fire-extinguishing agents
 AU Meissner, E.; Twardochleb, B.; Milchert, E.; Wroblewska, A.; Szymanowski,
 J.
 CS Kedzierzyn-Kozle, Pol.
 SO Tenside, Surfactants, Detergents (2003), 40(6), 353-360
 CODEN: TSDEES; ISSN: 0932-3414
 PB Carl Hanser Verlag
 DT Journal
 LA English
 CC 46-4 (Surface Active Agents and Detergents)
 Section cross-reference(s): 37
 AB Thirty-six fire-extinguishing agents of the Aqueous Film Forming Foams (AFFF)
 type were prepared, and some of their properties investigated. Each of them
 contained at least two surfactants with a perfluoroalkyl hydrophobic chain
 and an anionic, cationic, nonionic or zwitterionic polar head. The
 synergisms in surface tension reduction and foaming properties of the
 fire-extinguishing agents were considered. Apart from perfluoroorg.
 compds. the agents also contain surfactants with a hydrocarbon hydrophobic
 chain, organic solvents of the "Cellosolve" type, foam stabilizers and
 antifreeze agents. The lowest values of surface tensions for aqueous solns.
 are achieved with anionic (KK, SATT, PFKA) or zwitterionic compds. (SB,
 CB). The foaming ability and foam stability increases with the increase
 in anionic surfactant concentration
 ST perfluoroorg surfactant anionic surface tension fire extinguishing agent
 IT **Surfactants**
 (anionic; preparation and estimation of foam forming properties and surface
 tension of fire-extinguishing agents)
 IT **Surfactants**
 (cationic; preparation and estimation of foam forming properties and surface
 tension of fire-extinguishing agents)
 IT **Surfactants**
 (nonionic; preparation and estimation of foam forming properties and surface
 tension of fire-extinguishing agents)
 IT Fire extinguishers
 Foams
 Surface tension
 (preparation and estimation of foam forming properties and surface tension of
 fire-extinguishing agents)

IT Surfactants

(zwitterionic; preparation and estimation of foam forming properties and surface tension of fire-extinguishing agents)

IT 15166-06-0P 15899-28-2P 15899-32-8P 15957-30-9P 680576-87-8P
680576-88-9P 680576-89-0P 680576-90-3P 680576-98-1P 680576-99-2P
680577-00-8P

RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(preparation and estimation of foam forming properties and surface tension of fire-extinguishing agents)

IT 60-24-2 74-88-4, reactions 75-21-8, Oxirane, reactions 75-65-0,
tert-Butyl alcohol, reactions 79-11-8, Chloroacetic acid, reactions
103-76-4, 1-Piperazineethanol 107-18-6, Allyl alcohol, reactions
108-00-9 109-89-7, Diethylamine, reactions 111-42-2, reactions
121-44-8, Triethylamine, reactions 662-27-1 677-90-7 677-93-0
678-16-0 865-77-0 1120-71-4 1310-73-2, Sodium hydroxide, reactions
1514-90-5 2355-30-8 3486-08-6 7719-09-7, Thionyl chloride
680576-91-4 680576-92-5 680576-93-6

RL: RCT (Reactant); RACT (Reactant or reagent)
(preparation and estimation of foam forming properties and surface tension of fire-extinguishing agents)

IT 15165-97-6P 152074-60-7P 680576-97-0P 680577-02-0P 680577-06-4P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT
(Reactant or reagent)

(preparation and estimation of foam forming properties and surface tension of fire-extinguishing agents)

IT 149270-38-2P 149270-39-3P 149270-40-6P 680576-94-7P 680576-95-8P
680576-96-9P

RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation and estimation of foam forming properties and surface tension of fire-extinguishing agents)

IT 465499-94-9P 680577-01-9P 680577-04-2P 680577-05-3P
680577-07-5P 680577-08-6P 680577-09-7P 680577-10-0P 680577-11-1P

RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(surfactant; preparation and estimation of foam forming properties and surface tension of fire-extinguishing agents)

RE. CNT 14 THERE ARE 14 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

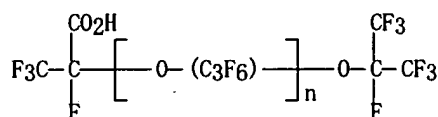
- (1) Chambers, R; Prac Chem Soc 1961, P113 HCAPLUS
- (2) Dams, R; WO 45167 1997 HCAPLUS
- (3) Fitters, O; Fine Technical 1969, V5, P284
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- (11) Redies, F; DE 2559189 1975 HCAPLUS
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IT 465499-94-9P

RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(surfactant; preparation and estimation of foam forming properties and surface tension of fire-extinguishing agents)

RN 465499-94-9 HCAPLUS

CN Poly[oxy(trifluoro(trifluoromethyl)-1,2-ethanediyl)], α -(1-carboxy-1,2,2,2-tetrafluoroethyl)- ω -[1,2,2,2-tetrafluoro-1-(trifluoromethyl)ethoxy]-, ammonium salt (9CI) (CA INDEX NAME)

● NH₃

L24 ANSWER 6 OF 23 HCAPLUS COPYRIGHT 2005 ACS on STN
 AN 2003:892828 HCAPLUS
 DN 139:365763
 ED Entered STN: 14 Nov 2003
 TI High vinyl ether modified sinterable polytetrafluoroethylene
 IN Aten, Ralph M.; Libert, Sharon Ann
 PA E. I. Du Pont de Nemours & Co., USA
 SO PCT Int. Appl., 26 pp.
 CODEN: PIXXD2

DT Patent
 LA English
 IC ICM C08F214-26
 CC 37-3 (Plastics Manufacture and Processing)

FAN. CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------|---------------------------------------------------------------------------------------------------------------|------|----------|-----------------|----------|
| PI | WO 2003093333 | A1 | 20031113 | WO 2003-US13210 | 20030429 |
| | W: CN, JP | | | | |
| | RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR | | | | |
| | US 2003216531 | A1 | 20031120 | US 2003-420144 | 20030422 |
| | US 6870020 | B2 | 20050322 | | |
| | EP 1499650 | A1 | 20050126 | EP 2003-721917 | 20030429 |
| | R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, FI, RO, CY, TR, BG, CZ, EE, HU, SK | | | | |
| PRAI | US 2002-376645P | P | 20020430 | | |
| | WO 2003-US13210 | W | 20030429 | | |

CLASS

| PATENT NO. | CLASS | PATENT FAMILY CLASSIFICATION CODES |
|------------|-------|------------------------------------|
|------------|-------|------------------------------------|

| | | |
|---------------|------|--------------------------|
| WO 2003093333 | ICM | C08F214-26 |
| WO 2003093333 | ECLA | C08F214/26D |
| US 2003216531 | NCL | 526/247.000; 526/250.000 |
| | ECLA | C08F214/26D |

AB Disclosed is a modified polytetrafluoroethylene powder of a sinterable copolymer of tetrafluoroethylene containing .apprx.0.5-10% of fluorinated vinyl ether, the copolymer having a melt creep viscosity of greater than about 1 x 10⁶ Pa·S. In preferred embodiments, the sinterable copolymer has a melt creep viscosity of greater than .apprx.1 x 10⁷ Pa·S and fluorinated vinyl ether content of from .apprx.1-7%. The polymer has a combination of a high level of fluorinated vinyl ether and a melt creep viscosity which is high enough to enable the fabrication of articles by sintering.

ST sinterable vinyl ether modified polytetrafluoroethylene powder melt creep viscosity

IT Fluoropolymers, preparation

RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(manufacture of high vinyl ether modified sinterable polytetrafluoroethylene with high melt creep viscosity)

IT **Surfactants**

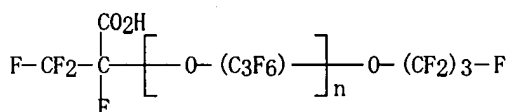
(non-telogenic fluorinated compound; in manufacture of high vinyl ether modified sinterable polytetrafluoroethylene with high melt creep viscosity)

IT Polyethers, uses

RL: MOA (Modifier or additive use); USES (Uses)

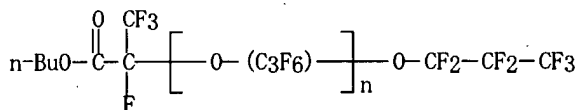
(perfluoro, carboxy-containing, for surfactants; in manufacture of high vinyl ether modified sinterable polytetrafluoroethylene with high melt creep

- viscosity)
- IT Fluoropolymers, uses
RL: MOA (Modifier or additive use); USES (Uses)
(polyether-, perfluoro, carboxy-containing, for surfactants; in manufacture of high vinyl ether modified sinterable polytetrafluoroethylene with high melt creep viscosity)
- IT 26425-79-6P, Perfluoro(methyl vinyl ether)-tetrafluoroethylene copolymer
26655-00-5P, Perfluoro(propyl vinyl ether)-tetrafluoroethylene copolymer
31784-04-0P, Perfluoro(ethyl vinyl ether)-tetrafluoroethylene copolymer
RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(manufacture of high vinyl ether modified sinterable polytetrafluoroethylene with high melt creep viscosity)
- IT 90317-74-1, KRYTOX 157FSL 196623-59-3, Fluorolink C
RL: MOA (Modifier or additive use); USES (Uses)
(surfactants; in manufacture of high vinyl ether modified sinterable polytetrafluoroethylene with high melt creep viscosity)
- RE. CNT 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD
- RE
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 - (2) Fasig, E; US 3819594 A 1974 HCAPLUS
 - (3) Franklin, G; US 3635926 A 1972
 - (4) Khan, A; US 4380618 A 1983 HCAPLUS
 - (5) Nakamura, Y; US 5709944 A 1998
- IT 90317-74-1, KRYTOX 157FSL
RL: MOA (Modifier or additive use); USES (Uses)
(surfactants; in manufacture of high vinyl ether modified sinterable polytetrafluoroethylene with high melt creep viscosity)
- RN 90317-74-1 HCAPLUS
- CN Poly[oxy(trifluoro(trifluoromethyl)-1,2-ethanediyl)], α -(1-carboxy-1,2,2,2-tetrafluoroethyl)- ω -(heptafluoropropoxy)- (9CI) (CA INDEX NAME)



- L24 ANSWER 7 OF 23 HCAPLUS COPYRIGHT 2005 ACS on STN
- AN 2003:541285 HCAPLUS
- DN 139:231047
- ED Entered STN: 16 Jul 2003
- TI Dispersion Polymerizations of Methyl Methacrylate in Supercritical Carbon Dioxide with a Novel Ester End-Capped Perfluoropolyether Stabilizer
- AU Wang, Wenxin; Naylor, Andrew; Howdle, Steven M.
- CS School of Chemistry, University of Nottingham, Nottingham, NG7 2RD, UK
- SO Macromolecules (2003), 36(14), 5424-5427
CODEN: MAMOBX; ISSN: 0024-9297
- PB American Chemical Society
- DT Journal
- LA English
- CC 35-4 (Chemistry of Synthetic High Polymers)
- AB Dispersion polymerization of Me methacrylate in supercrit. CO2 was performed in the presence of a well-defined ester end-capped perfluoropolyether (I), which was prepared by reaction of acid-terminated perfluoropolyether with butanol. I acted as a dispersion agent, keeping the growing polymer chains dispersed in the reaction medium.
- ST perfluoropolyether dispersing agent methacrylate polymn supercrit carbon dioxide
- IT **Dispersing agents**
Polymerization
(dispersion polymerization of Me methacrylate in supercrit. carbon dioxide with perfluoropolyether dispersing agent)
- IT Polyoxyalkylenes, uses
RL: NUU (Other use, unclassified); USES (Uses)
(fluorine-containing; dispersion polymerization of Me methacrylate in supercrit. carbon dioxide with perfluoropolyether dispersing agent)

- IT Fluoropolymers, uses
 RL: NUU (Other use, unclassified); USES (Uses)
 (polyoxyalkylene-; dispersion polymerization of Me methacrylate in supercrit. carbon dioxide with perfluoropolyether dispersing agent)
- IT 124-38-9, Carbon dioxide, uses
 RL: NUU (Other use, unclassified); USES (Uses)
 (dispersion polymerization of Me methacrylate in supercrit. carbon dioxide with perfluoropolyether dispersing agent)
- IT 146166-99-6P, Krytox 157FSL butyl ester
 RL: NUU (Other use, unclassified); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
 (dispersion polymerization of Me methacrylate in supercrit. carbon dioxide with perfluoropolyether dispersing agent)
- IT 9011-14-7P, Methyl methacrylate homopolymer
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (dispersion polymerization of Me methacrylate in supercrit. carbon dioxide with perfluoropolyether dispersing agent)
- RE. CNT 19 THERE ARE 19 CITED REFERENCES AVAILABLE FOR THIS RECORD
- RE
- (1) Canelas, D; Macromolecules 1997, V30, P5673 HCAPLUS
 - (2) Christian, P; Macromolecules 2000, V33, P237 HCAPLUS
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 - (19) Yong, T; Chem Commun 1997, P1811 HCAPLUS
- IT 146166-99-6P, Krytox 157FSL butyl ester
 RL: NUU (Other use, unclassified); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
 (dispersion polymerization of Me methacrylate in supercrit. carbon dioxide with perfluoropolyether dispersing agent)
- RN 146166-99-6 HCAPLUS
- CN Poly[oxy(trifluoro(trifluoromethyl)-1,2-ethanediyl)], α -[1-(butoxycarbonyl)-1,2,2,2-tetrafluoroethyl]- ω -(heptafluoropropoxy)-(9CI) (CA INDEX NAME)



L24 ANSWER 8 OF 23 HCAPLUS COPYRIGHT 2005 ACS on STN
 AN 2003:434953 HCAPLUS
 DN 139:11320
 ED Entered STN: 06 Jun 2003
 TI Method and apparatus for decontamination of sensitive equipment
 IN Kaiser, Robert
 PA USA
 SO U.S. Pat. Appl. Publ., 40 pp.
 CODEN: USXXCO
 DT Patent
 LA English
 IC ICM B08B003-12
 INCL 134001000; 134010000; 134018000

CC 59-6 (Air Pollution and Industrial Hygiene)

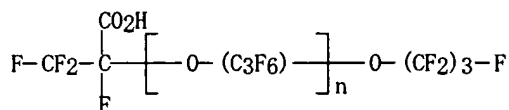
FAN. CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------|-----------------|------|----------|-----------------|----------|
| PI | US 2003102007 | A1 | 20030605 | US 2002-154488 | 20020523 |
| PRAI | US 2001-292967P | P | 20010523 | | |

CLASS

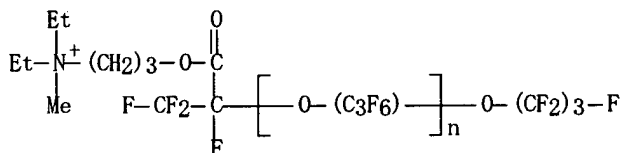
| PATENT NO. | CLASS | PATENT FAMILY CLASSIFICATION CODES |
|---------------|-------|---------------------------------------|
| US 2003102007 | ICM | B08B003-12 |
| | INCL | 134001000; 134010000; 134018000 |
| US 2003102007 | NCL | 134/001.000; 134/010.000; 134/018.000 |
| | ECLA | B08B003/02; B08B003/12 |

- AB Ultrasonic solvent cleaning processes can effectively decontaminate sensitive electronic and optical equipment exposed to chemical or biol. warfare agents. Contaminant removal occurs in three steps: removal of the contaminant from the surface of the part being processed, transfer of the dissolved or suspended contaminant into the bulk of the decontamination liquid in the immersion sump, and then removal of the dissolved contaminant by activated carbon adsorption, or suspended contaminant by filtration. When agent contaminated decontamination liquid is passed through a bed of activated carbon, the agent adsorbs onto the activated carbon, resulting in agent free decontamination liquid that can be recycled and reused. The method is nonflammable, nontoxic, and environmentally acceptable. Ultrasonic agitation provides effective mass and phys. transfer of contaminants from the surfaces of the objects being decontaminated to the bulk of the decontamination liquid. Decontamination of sensitive equipment in decontamination fluid can be performed in com. available ultrasonic vapor degreasers.
- ST chem warfare agent removal electronic app ultrasonic solvent cleaning;
biol warfare agent removal electronic app ultrasonic solvent cleaning
- IT **Surfactants**
(fluorinated; method and apparatus for decontamination of sensitive equipment)
- IT Hydrocarbons, uses
RL: NUU (Other use, unclassified); USES (Uses)
(fluoro; method and apparatus for decontamination of sensitive equipment)
- IT Biological warfare agents
Chemical warfare agents
Sound and Ultrasound
(method and apparatus for decontamination of sensitive equipment)
- IT 7440-44-0, Carbon, uses
RL: NUU (Other use, unclassified); USES (Uses)
(activated; method and apparatus for decontamination of sensitive equipment)
- IT 335-76-2, Perfluorodecanoic Acid 25038-02-2, Krytox Alcohol
51798-33-5, Krytox 157FS(H) **90317-74-1**, Krytox 157FS(L)
106441-39-8, Fomblin Z Diacid 163702-05-4, HFE 7200 219484-64-7, HFE
7100 533902-85-1, HFE 7500
RL: NUU (Other use, unclassified); USES (Uses)
(method and apparatus for decontamination of sensitive equipment)
- IT 112-80-1, Oleic acid, uses 143-28-2, Oleyl alcohol 532993-09-2,
Rhodasurf LA 3 532993-30-9, Rhodasurf LAN 3
RL: MOA (Modifier or additive use); USES (Uses)
(surfactant; method and apparatus for decontamination of sensitive equipment)
- IT **90317-74-1**, Krytox 157FS(L)
RL: NUU (Other use, unclassified); USES (Uses)
(method and apparatus for decontamination of sensitive equipment)
- RN 90317-74-1 HCAPLUS
- CN Poly[oxy(trifluoro(trifluoromethyl)-1,2-ethanediyl)], α -(1-carboxy-1,2,2,2-tetrafluoroethyl)- ω -(heptafluoropropoxy)- (9CI) (CA INDEX NAME)



L24 ANSWER 9 OF 23 HCAPLUS COPYRIGHT 2005 ACS on STN
 AN 2003:4622 HCAPLUS
 DN 139:370139
 ED Entered STN: 03 Jan 2003
 TI Interfacial studies of the formation of microemulsions of water in carbon dioxide with fluorinated surfactants. [Erratum to document cited in CA137:206826]
 AU Psathas, Petros A.; Sander, Edward A.; Ryoo, Won; Mitchell, Daniel; Felling, Kyle W.; Lagow, Richard J.; Lim, Kwon Tae; Johnston, Keith P.
 CS Department of Chemical Engineering, The University of Texas at Austin, Austin, TX, 78712, USA
 SO Journal of Dispersion Science and Technology (2002), 23(6), b853
 CODEN: JDTEDS; ISSN: 0193-2691
 PB Marcel Dekker, Inc.
 DT Journal
 LA English
 CC 66-2 (Surface Chemistry and Colloids)
 Section cross-reference(s): 35
 AB The name of Kyle W. Felling is added to the by-line as the fifth author.
 ST erratum interfacial tension microemulsion water carbon dioxide fluorinated surfactant; salinity microemulsion water carbon dioxide light scattering erratum
 IT Polyoxyalkylenes, preparation
 RL: NUU (Other use, unclassified); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
 (fluorine-containing, surfactants; interfacial studies of formation of microemulsions of water in carbon dioxide with fluorinated surfactants as function of (Erratum))
 IT Interfacial tension
 (interfacial studies of formation of microemulsions of water in carbon dioxide with fluorinated surfactants (Erratum))
 IT Salinity
 (interfacial studies of formation of microemulsions of water in carbon dioxide with fluorinated surfactants as function of (Erratum))
 IT **Surfactants**
 (ionic; interfacial studies of formation of microemulsions of water in carbon dioxide with fluorinated surfactants (Erratum))
 IT Emulsions
 (microemulsions; interfacial studies of formation of microemulsions of water in carbon dioxide with fluorinated surfactants (Erratum))
 IT Fluoropolymers, preparation
 RL: NUU (Other use, unclassified); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
 (polyoxyalkylene-, surfactants; interfacial studies of formation of microemulsions of water in carbon dioxide with fluorinated surfactants as function of (Erratum))
 IT Polyoxyalkylenes, reactions
 Polyoxyalkylenes, reactions
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (preparation of perfluoro Me ether poly(ethylene glycol) carboxylic acids as surfactants for microemulsions of water in carbon dioxide (Erratum))
 IT **454221-32-0**
 RL: NUU (Other use, unclassified); USES (Uses)
 (interfacial studies of formation of microemulsions of water in carbon dioxide with fluorinated surfactants (Erratum))
 IT 124-38-9, Carbon dioxide, properties 7732-18-5, Water, properties
 RL: PEP (Physical, engineering or chemical process); PRP (Properties); PYP (Physical process); PROC (Process)
 (interfacial studies of formation of microemulsions of water in carbon dioxide with fluorinated surfactants (Erratum))
 IT 454170-74-2P 454170-75-3P
 RL: NUU (Other use, unclassified); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
 (preparation of perfluoro Me ether poly(ethylene glycol) carboxylic acids as surfactants for microemulsions of water in carbon dioxide (Erratum))
 IT 76-13-1, 1,1,2-Trichlorotrifluoroethane 9004-74-4, Poly(ethylene glycol) methyl ether 25322-68-3, Poly(ethylene glycol)
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (preparation of perfluoro Me ether poly(ethylene glycol) carboxylic acids as

- surfactants for microemulsions of water in carbon dioxide (Erratum))
- IT **454221-32-0**
 RL: NUU (Other use, unclassified); USES (Uses)
 (interfacial studies of formation of microemulsions of water in carbon dioxide with fluorinated surfactants (Erratum))
- RN 454221-32-0 HCAPLUS
- CN Poly[oxy[trifluoro(trifluoromethyl)-1,2-ethanediyl]], α -[1-[[3-(diethylmethylammonio)propoxy]carbonyl]-1,2,2,2-tetrafluoroethyl]- ω -(heptafluoropropoxy)-, chloride (9CI) (CA INDEX NAME)



● Cl⁻

- L24 ANSWER 10 OF 23 HCAPLUS COPYRIGHT 2005 ACS on STN
- AN 2002:471751 HCAPLUS
- DN 137:206826
- ED Entered STN: 24 Jun 2002
- TI Interfacial studies of the formation of microemulsions of water in carbon dioxide with fluorinated surfactants
- AU Psathas, Petros A.; Sander, Edward A.; Ryoo, Won; Mitchell, Daniel; Lagow, Richard J.; Lim, Kwon Taek; Johnston, Keith P.
- CS Department of Chemical Engineering, The University of Texas at Austin, Austin, TX, 78712, USA
- SO Journal of Dispersion Science and Technology (2002), 23(1-3), 81-92
 CODEN: JDTEDS; ISSN: 0193-2691
- PB Marcel Dekker, Inc.
- DT Journal
- LA English
- CC 66-2 (Surface Chemistry and Colloids)
 Section cross-reference(s): 35
- AB Measurements of the interfacial tension, γ , for water-CO₂-perfluoropolyether (PFPE) ionic surfactant systems are utilized to understand the surfactant affinity for the various phases and adsorption at the interface. A marked decrease in γ with salinity is observed as salt screens electrostatic repulsion and induces microemulsion formation, as confirmed with dynamic light scattering. In several cases, the interfacial tension goes through an unusual maximum with salinity, which is explained in terms of competition between surfactant affinity for the various phases and microemulsion formation. Fundamental studies of interfacial properties provide important insight for designing surfactants and exptl. conditions to achieve the desired properties of water/CO₂ microemulsions and emulsions.
- ST interfacial tension microemulsion water carbon dioxide fluorinated surfactant; salinity microemulsion water carbon dioxide light scattering
- IT Polyoxyalkylenes, preparation
 RL: NUU (Other use, unclassified); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
 (fluorine-containing, surfactants; interfacial studies of formation of microemulsions of water in carbon dioxide with fluorinated surfactants as function of)
- IT Interfacial tension
 (interfacial studies of formation of microemulsions of water in carbon dioxide with fluorinated surfactants)
- IT Salinity
 (interfacial studies of formation of microemulsions of water in carbon dioxide with fluorinated surfactants as function of)
- IT **Surfactants**
 (ionic; interfacial studies of formation of microemulsions of water in carbon dioxide with fluorinated surfactants)

- IT Emulsions
(microemulsions; interfacial studies of formation of microemulsions of water in carbon dioxide with fluorinated surfactants)
- IT Fluoropolymers, preparation
RL: NUU (Other use, unclassified); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(polyoxyalkylene-, surfactants; interfacial studies of formation of microemulsions of water in carbon dioxide with fluorinated surfactants as function of)
- IT Polyoxyalkylenes, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(preparation of perfluoro Me ether poly(ethylene glycol) carboxylic acids as surfactants for microemulsions of water in carbon dioxide)
- IT 454221-32-0
RL: NUU (Other use, unclassified); USES (Uses)
(interfacial studies of formation of microemulsions of water in carbon dioxide with fluorinated surfactants)
- IT 124-38-9, Carbon dioxide, properties 7732-18-5, Water, properties
RL: PEP (Physical, engineering or chemical process); PRP (Properties); PYP (Physical process); PROC (Process)
(interfacial studies of formation of microemulsions of water in carbon dioxide with fluorinated surfactants)
- IT 454170-74-2P 454170-75-3P
RL: NUU (Other use, unclassified); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(preparation of perfluoro Me ether poly(ethylene glycol) carboxylic acids as surfactants for microemulsions of water in carbon dioxide)
- IT 76-13-1, 1,1,2-Trichlorotrifluoroethane 9004-74-4, Poly(ethylene glycol) methyl ether 25322-68-3, Poly(ethylene glycol)
RL: RCT (Reactant); RACT (Reactant or reagent)
(preparation of perfluoro Me ether poly(ethylene glycol) carboxylic acids as surfactants for microemulsions of water in carbon dioxide)

RE. CNT 69 THERE ARE 69 CITED REFERENCES AVAILABLE FOR THIS RECORD

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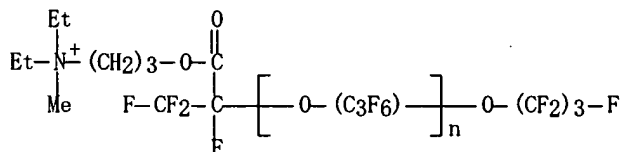
IT 454221-32-0

RL: NUU (Other use, unclassified); USES (Uses)

(interfacial studies of formation of microemulsions of water in carbon dioxide with fluorinated surfactants)

RN 454221-32-0 HCAPLUS

CN Poly[oxy(trifluoro(trifluoromethyl)-1,2-ethanediyl)], α -[1-[[3-(diethylmethyllumonio)propoxy]carbonyl]-1,2,2,2-tetrafluoroethyl]- ω -(heptafluoropropoxy)-, chloride (9CI) (CA INDEX NAME)



● Cl⁻

- L24 ANSWER 11 OF 23 HCAPLUS COPYRIGHT 2005 ACS on STN
 AN 2002:471750 HCAPLUS
 DN 137:206825
 ED Entered STN: 24 Jun 2002
 TI Mapping the stability and curvature of emulsions of H2O and supercritical CO2 with interfacial tension measurements
 AU Psathas, Petros A.; Sander, Edward A.; Lee, Min Young; Lim, Kwon Taek; Johnston, Keith P.
 CS Department of Chemical Engineering, The University of Texas at Austin, Austin, TX, 78712, USA
 SO Journal of Dispersion Science and Technology (2002), 23(1-3), 65-80
 CODEN: JDTEDS; ISSN: 0193-2691
 PB Marcel Dekker, Inc.
 DT Journal
 LA English
 CC 66-2 (Surface Chemistry and Colloids)
 Section cross-reference(s): 35
 AB The stability and curvature of emulsions of H2O and CO2 are reported and analyzed in terms of measurements of interfacial tension vs. formulation variables, including salinity, CO2 d., temperature and pH. Among the surfactants studied are, quaternary ammonium cationic ones with perfluoropolyether tails, block copolymer ionomers and a poly(hydroxyethyl methacrylate) with polydimethylsiloxane tails, and a nonionic ethylene oxide surfactant with a fluoroalkane tail. The interfacial tension measurements were made at surfactant concns. from 0.05 to 1.0 weight% with a variable-volume pendant drop tensiometer up to 345 bar and 363° K. As a formulation variable was varied, the system reached a balanced state characterized by a min. in interfacial tension, a loss in emulsion stability and in some cases an inversion from a W/C to C/W emulsion. Here the Marangoni-Gibbs stabilization weakens, and also it becomes easy to bend and rupture the surfactant monolayer, causing coalescence. Except in the case of the nonionic fluorinated surfactant C8F17-SO2NEt-(CH2CH2O)12-14CH3, the crossover from the CO2-continuous (W/C) to the H2O-continuous (C/W) emulsion occurred abruptly due to clouding of the surfactant out of the CO2 phase. For PFPE-TMAA, the plot of γ vs. surfactant concentration revealed both pre-micellar aggregates and a critical microemulsion, each of which was dependent on salinity.
 ST emulsion water supercrit carbon dioxide stability curvature interfacial tension; surfactant water supercrit carbon dioxide emulsion stability curvature
 IT Polysiloxanes, preparation
 RL: NUU (Other use, unclassified); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
 (acrylic, block; mapping stability and curvature of emulsions of H2O and supercrit. CO2 with interfacial tension measurements)
 IT **Surfactants**
 (cationic; mapping stability and curvature of emulsions of H2O and supercrit. CO2 with various surfactants)
 IT Polyoxyalkylenes, preparation
 RL: NUU (Other use, unclassified); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
 (fluorine-containing, cationic surfactants; mapping stability and curvature of emulsions of H2O and supercrit. CO2 with interfacial tension measurements)
 IT **Surfactants**
 (ionomer; mapping stability and curvature of emulsions of H2O and supercrit. CO2 with various surfactants)
 IT Interfacial tension
 (mapping stability and curvature of emulsions of H2O and supercrit. CO2 with interfacial tension measurements)
 IT Coalescence
 Monolayers
 Stability
 (mapping stability and curvature of emulsions of H2O and supercrit. CO2 with various surfactants)
 IT Emulsions
 (microemulsions; mapping stability and curvature of emulsions of H2O and supercrit. CO2 with various surfactants)
 IT **Surfactants**
 (nonionic; mapping stability and curvature of emulsions of H2O and

- supercrit. CO2 with various surfactants)
- IT Fluoropolymers, preparation
RL: NUU (Other use, unclassified); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(polyoxyalkylene-, cationic surfactants; mapping stability and curvature of emulsions of H2O and supercrit. CO2 with interfacial tension measurements)
- IT 124-38-9, Carbon dioxide, properties 7732-18-5, Water, properties
RL: PRP (Properties)
(mapping stability and curvature of emulsions of H2O and supercrit. CO2 with interfacial tension measurements)
- IT 1652-63-7, FC-135 29117-08-6, FC-170C 227018-51-1D, hydrolyzed 287735-36-8D, hydrolyzed 393855-40-8D, hydrolyzed **454221-30-8**
RL: NUU (Other use, unclassified); USES (Uses)
(mapping stability and curvature of emulsions of H2O and supercrit. CO2 with various surfactants)
- IT 454221-29-5P
RL: NUU (Other use, unclassified); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(mapping stability and curvature of emulsions of H2O and supercrit. CO2 with various surfactants)
- IT 616-39-7, N,N-Diethylmethylamine **90317-74-1**
RL: RCT (Reactant); RACT (Reactant or reagent)
(preparation of cationic perfluoropolyether surfactant for use in emulsions of H2O and supercrit. CO2)
- IT **454221-28-4P**
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation of cationic perfluoropolyether surfactant for use in emulsions of H2O and supercrit. CO2)

RE. CNT 67 THERE ARE 67 CITED REFERENCES AVAILABLE FOR THIS RECORD

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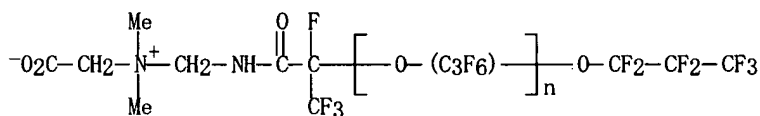
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IT 454221-30-8

RL: NUU (Other use, unclassified); USES (Uses)
 (mapping stability and curvature of emulsions of H2O and supercrit. CO2 with various surfactants)

RN 454221-30-8 HCAPLUS

CN Poly[oxy(trifluoro(trifluoromethyl)-1,2-ethanediyl)], α -[1-[[[(carboxymethyl)dimethylammonio]methyl]amino]carbonyl]-1,2,2,2-tetrafluoroethyl)- ω -(heptafluoropropoxy)-, inner salt (9CI) (CA INDEX NAME)

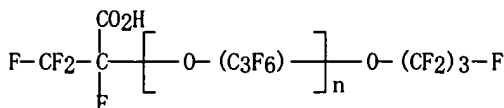


IT 90317-74-1

RL: RCT (Reactant); RACT (Reactant or reagent)
 (preparation of cationic perfluoropolyether surfactant for use in emulsions of H2O and supercrit. CO2)

RN 90317-74-1 HCAPLUS

CN Poly[oxy(trifluoro(trifluoromethyl)-1,2-ethanediyl)], α -(1-carboxy-1,2,2,2-tetrafluoroethyl)- ω -(heptafluoropropoxy)- (9CI) (CA INDEX NAME)

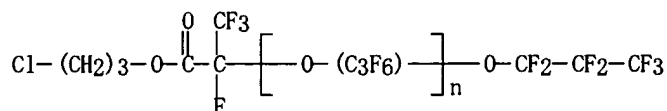


IT 454221-28-4P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(preparation of cationic perfluoropolyether surfactant for use in emulsions of H₂O and supercrit. CO₂)

RN 454221-28-4 HCAPLUS

CN Poly[oxy(trifluoro(trifluoromethyl)-1,2-ethanediyl)], α -[1-[(3-chloropropoxy)carbonyl]-1,2,2,2-tetrafluoroethyl]- ω -(heptafluoropropoxy)- (9CI) (CA INDEX NAME)

L24 ANSWER 12 OF 23 HCAPLUS COPYRIGHT 2005 ACS on STN

AN 2002:403912 HCAPLUS

DN 136:402218

ED Entered STN: 30 May 2002

TI Aqueous dispersion polymerization of fluoromonomers using fluorosurfactant

IN Morgan, Richard Alan; Jones, Clay Woodward; Treat, Theodore; Hrivnak, Jeffrey A.

PA E. I. Du Pont de Nemours & Co., USA

SO U.S., 15 pp., Cont.-in-part of U.S. Ser. No. 570,853.

CODEN: USXXAM

DT Patent

LA English

IC ICM C08F014-18

INCL 526214000

CC 35-4 (Chemistry of Synthetic High Polymers)

FAN.CNT 2

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------|-----------------|------|----------|-----------------|----------|
| PI | US 6395848 | B1 | 20020528 | US 2000-704333 | 20001102 |
| | US 6429258 | B1 | 20020806 | US 2000-570853 | 20000512 |
| PRAI | US 1999-135074P | P | 19990520 | | |
| | US 2000-570853 | A2 | 20000512 | | |

CLASS

| PATENT NO. | CLASS | PATENT FAMILY CLASSIFICATION CODES |
|------------|-------|-----------------------------------------------------------------------------------------------------------------------------------------------|
| US 6395848 | ICM | C08F014-18 |
| | INCL | 526214000 |
| US 6395848 | NCL | 526/214.000; 523/203.000; 524/316.000; 524/805.000; 526/209.000; 526/250.000; 526/253.000; 526/254.000; 526/255.000; 526/910.000; 526/911.000 |
| | ECLA | C08F014/26+2/16; C08F214/26D |
| US 6429258 | NCL | 524/805.000; 524/544.000; 524/545.000; 524/546.000; 526/242.000 |
| | ECLA | C08F014/26+2/16; C08F214/26D |

AB Title process comprising polymerizing at least one fluorinated monomer in an aqueous medium containing initiator and dispersing agent to obtain an aqueous dispersion of particles of fluoropolymer, wherein said dispersing agent is a combination of at least two fluorosurfactants, at least one of said fluorosurfactants being perfluoropolyether carboxylic or sulfonic acid or salt thereof, and at least one of said fluorosurfactants being fluoroalkyl carboxylic or sulfonic acid or salt thereof, or fluoroalkoxy aryl sulfonic acid or salt thereof. Thus, hexafluoropropylene was copolyd. with tetrafluoroethylene in water containing Zonyl FS62 and Krytox 157FSL in the presence of ammonium persulfate.

ST aq dispersion polymn fluoromonomer fluorosurfactant perfluoropolyether

IT **Dispersing agents**

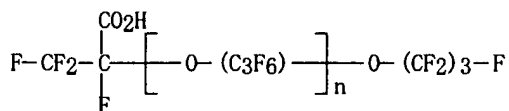
Polymerization catalysts

(aqueous dispersion polymerization of fluoromonomers using fluorosurfactant)

IT Fluoropolymers, preparation

RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

- (aqueous dispersion polymerization of fluoromonomers using fluorosurfactant)
- IT Polymerization
(dispersion; aqueous dispersion polymerization of fluoromonomers using fluorosurfactant)
- IT **Surfactants**
(fluorosurfactants; aqueous dispersion polymerization of fluoromonomers using fluorosurfactant)
- IT Polyethers, uses
RL: MOA (Modifier or additive use); USES (Uses)
(perfluoro, fluorosurfactant; aqueous dispersion polymerization of fluoromonomers using fluorosurfactant)
- IT Fluoropolymers, uses
RL: MOA (Modifier or additive use); USES (Uses)
(polyether-, perfluoro, fluorosurfactant; aqueous dispersion polymerization of fluoromonomers using fluorosurfactant)
- IT 9002-84-0P, Tetrafluoroethylene homopolymer 25067-11-2P, Hexafluoropropylene-tetrafluoroethylene copolymer 26655-00-5P, Perfluoro propyl vinyl ether-tetrafluoroethylene copolymer 63654-40-0P, Hexafluoropropylene-perfluoro ethyl vinyl ether-tetrafluoroethylene copolymer 82606-24-4P, Perfluorobutylethylene-tetrafluoroethylene copolymer 165178-32-5P, Perfluoro methyl vinyl ether-perfluoro propyl vinyl ether-tetrafluoroethylene copolymer
RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(aqueous dispersion polymerization of fluoromonomers using fluorosurfactant)
- IT 3825-26-1, Ammonium perfluorooctanoate 51798-33-5, Krytox 157FSH
90317-74-1, Krytox 157FS(L) 111019-20-6, Zonyl TBS
120895-92-3, Demnum SH 196623-59-3, Fluorolink C. 314057-01-7, Zonyl FS 62 430474-48-9 431048-66-7
RL: MOA (Modifier or additive use); USES (Uses)
(fluorosurfactant; aqueous dispersion polymerization of fluoromonomers using fluorosurfactant)
- IT 7727-21-1, Potassium persulfate 7727-54-0, Ammonium persulfate
RL: CAT (Catalyst use); USES (Uses)
(polymerization initiator; aqueous dispersion polymerization of fluoromonomers using fluorosurfactant)
- RE. CNT 13 THERE ARE 13 CITED REFERENCES AVAILABLE FOR THIS RECORD
- RE
- (1) Anon; EP 0006346 A1 1980 HCAPLUS
 - (2) Anon; EP 248446 1987 HCAPLUS
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- IT **90317-74-1**, Krytox 157FS(L)
RL: MOA (Modifier or additive use); USES (Uses)
(fluorosurfactant; aqueous dispersion polymerization of fluoromonomers using fluorosurfactant)
- RN 90317-74-1 HCAPLUS
- CN Poly[oxy(trifluoro(trifluoromethyl)-1,2-ethanediyl)], α -(1-carboxy-1,2,2,2-tetrafluoroethyl)- ω -(heptafluoropropoxy)- (9CI) (CA INDEX NAME)



DN 136:103982
 ED Entered STN: 23 Jan 2002
 TI Water-repellent coating compositions and production methods therefor and water-repellent coatings therewith for ink jet heads
 IN Hirano, Tadashi
 PA Konica Co., Japan
 SO Jpn. Kokai Tokkyo Koho, 5 pp.
 CODEN: JKXXAF
 DT Patent
 LA Japanese
 IC ICM C09D201-04
 ICS B41J002-135
 CC 42-10 (Coatings, Inks, and Related Products)
 Section cross-reference(s): 74

FAN. CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------|----------------|------|----------|-----------------|----------|
| PI | JP 2002020697 | A2 | 20020123 | JP 2000-204867 | 20000706 |
| PRAI | JP 2000-204867 | | 20000706 | | |

CLASS

| PATENT NO. | CLASS | PATENT FAMILY CLASSIFICATION CODES |
|------------|-------|------------------------------------|
|------------|-------|------------------------------------|

| | | |
|---------------|-----|-------------|
| JP 2002020697 | ICM | C09D201-04 |
| | ICS | B41J002-135 |

AB Coating compns. contain perfluorocyclopolymer, H-bonding solvent dispersants, and polymeric dispersants. Thus, 30 g CTL 109S 30, 100 g CT solv 100, and 2 mL Krytox 157 FSL were mixed, mixed with 20 µL Oscal 1432 and 1 mL TSL 8233 to give a colloidal solution, and coated.

ST water repellent coating ink jet head; perfluorocyclopolymer

IT Polymers, uses

RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)

(cyclic; water-repellent coatings for ink jet heads)

IT Fluoropolymers, uses

RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)

(cyclic; water-repellent coatings for ink jet heads)

IT Inks

(jet-printing; water-repellent coatings for ink jet heads)

IT Polyethers, uses

RL: MOA (Modifier or additive use); USES (Uses)

(perfluoro; water-repellent coatings for ink jet heads)

IT Fluoropolymers, uses

RL: MOA (Modifier or additive use); USES (Uses)

(polyether-, perfluoro; water-repellent coatings for ink jet heads)

IT Colloids

Dispersing agents

Printing apparatus

Sols

(water-repellent coatings for ink jet heads)

IT Coating materials

(water-resistant; water-repellent coatings for ink jet heads)

IT 83048-65-1, TSL 8233

RL: MOA (Modifier or additive use); USES (Uses)

(TSL 8233; water-repellent coatings for ink jet heads)

IT 7631-86-9, Oscal 1432, uses

RL: MOA (Modifier or additive use); USES (Uses)

(colloidal, Oscal 1432; water-repellent coatings for ink jet heads)

IT 1344-28-1, Alumina, uses 13463-67-7, Titania, uses

RL: MOA (Modifier or additive use); USES (Uses)

(sols; water-repellent coatings for ink jet heads)

IT 90317-74-1, Krytox 157FS(L)

RL: MOA (Modifier or additive use); USES (Uses)

(water-repellent coatings for ink jet heads)

IT 157710-30-0, CT solv 100

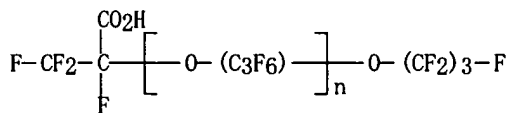
RL: NUU (Other use, unclassified); USES (Uses)

(water-repellent coatings for ink jet heads)

IT 389136-64-5, Cytop CTL 109S

RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)

(water-repellent coatings for ink jet heads)
 IT 90317-74-1, Krytox 157FS(L)
 RL: MOA (Modifier or additive use); USES (Uses)
 (water-repellent coatings for ink jet heads)
 RN 90317-74-1 HCAPLUS
 CN Poly[oxy(trifluoro(trifluoromethyl)-1,2-ethanediyl)], α -(1-carboxy-1,2,2,2-tetrafluoroethyl)- ω -(heptafluoropropoxy)- (9CI) (CA INDEX NAME)



L24 ANSWER 14 OF 23 HCAPLUS COPYRIGHT 2005 ACS on STN
 AN 2000:870309 HCAPLUS
 DN 134:229601
 ED Entered STN: 13 Dec 2000
 TI Supercritical drying for water-rinsed resist systems
 AU Namatsu, Hideo
 CS NTT Basic Research Laboratories, Atsugi-shi, Kanagawa, 243-0198, Japan
 SO Journal of Vacuum Science & Technology, B: Microelectronics and Nanometer Structures (2000), 18(6), 3308-3312
 CODEN: JVTBD9; ISSN: 0734-211X
 PB American Institute of Physics
 DT Journal
 LA English
 CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
 AB 2 Methods of supercrit. resist drying (SRD) using CO₂ were developed for H₂O-rinsed resist patterns. The key to their effectiveness is the use of a surfactant. In indirect SRD, a solution of n-hexane, a CO₂-philic liquid, and a surfactant, sorbitan fatty acid ether, 1st replaces the H₂O, and is in turn replaced with liquid CO₂ before SRD is performed. The addition of a compound with a high hydrophilic-lipophilic balance to the surfactant compensates for the poor miscibility of H₂O in a solution of n-hexane and sorbitan fatty acid ether. In direct SRD, which does not require a CO₂-philic liquid, the H₂O is replaced directly with liquid CO₂ containing a surfactant, fluoroether carboxylate, which makes H₂O miscible in CO₂; and then SRD is performed. The excellent results obtained by both methods demonstrate that there is no inherent barrier to the use of SRD on H₂O-rinsed resist patterns.
 ST supercrit drying water rinse resist system surfactant carbon dioxide; fluoroether carboxylate sorbitan ethylene glycol laurate oleate resist drying
 IT Resists
 Surfactants
 (direct and indirect methods of supercrit. resist drying using surfactant to replace rinse water with liquid carbon dioxide)
 IT Drying
 (supercrit.; direct and indirect methods of supercrit. resist drying using surfactant to replace rinse water with liquid carbon dioxide)
 IT 1338-39-2, Span 20 7732-18-5, Water, processes 8007-43-0, Arlacel 83 9005-64-5, Polyoxyethylene sorbitan monolaurate 9005-70-3, Polyoxyethylene sorbitan trioleate 26027-38-3 26266-58-0, Span 85 90317-74-1 182762-04-5, ZEP 7000B 263383-57-9, NEB 31
 RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
 (direct and indirect methods of supercrit. resist drying using surfactant to replace rinse water with liquid carbon dioxide)
 IT 124-38-9, Carbon dioxide, processes
 RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
 (liquid; direct and indirect methods of supercrit. resist drying using surfactant to replace rinse water with liquid carbon dioxide)
 RE.CNT 10 THERE ARE 10 CITED REFERENCES AVAILABLE FOR THIS RECORD
 RE

- (1) Chittofrati, A; Prog Colloid Polym Sci 1989, V79, P218 HCAPLUS
- (2) Gallagher-Wetmore, P; Proc SPIE 1995, V2438, P694 HCAPLUS
- (3) Griffin, W; J Soc Cosmet Chem 1954, V5, P249
- (4) Hyatt, J; J Org Chem 1984, V49, P5097 HCAPLUS
- (5) Johnston, K; Science 1996, V271, P624 HCAPLUS
- (6) Namatsu, H; Appl Phys Lett 1995, V66, P2655 HCAPLUS
- (7) Namatsu, H; J Vac Sci Technol B 2000, V18, P780 HCAPLUS
- (8) Namatsu, H; Microelectron Eng 1998, V46, P129
- (9) Newman, D; J Supercrit Fluids 1993, V6, P205 HCAPLUS
- (10) Ross, S; J Phys Chem 1959, V63, P1671 HCAPLUS

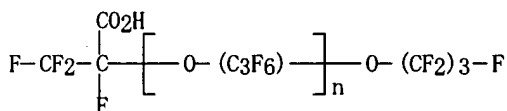
IT 90317-74-1

RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)

(direct and indirect methods of supercrit. resist drying using surfactant to replace rinse water with liquid carbon dioxide)

RN 90317-74-1 HCAPLUS

CN Poly[oxy(trifluoro(trifluoromethyl)-1,2-ethanediyl)], α -(1-carboxy-1,2,2,2-tetrafluoroethyl)- ω -(heptafluoropropoxy)- (9CI) (CA INDEX NAME)



L24 ANSWER 15 OF 23 HCAPLUS COPYRIGHT 2005 ACS on STN

AN 2000:842181 HCAPLUS

DN 134:29810

ED Entered STN: 01 Dec 2000

TI Aqueous dispersions of fluoropolymers and their production using fluorinated surfactants

IN Morgan, Richard Alan; Jones, Clay Woodward; Hirvna, Jeffrey; Treat, Theodore

PA E. I. Du Pont de Nemours & Co., USA

SO PCT Int. Appl., 35 pp.

CODEN: PIXXD2

DT Patent

LA English

IC ICM C08F014-18

CC 35-4 (Chemistry of Synthetic High Polymers)

Section cross-reference(s): 46

FAN. CNT 2

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------|----------------------------------------------------------------------------|------|----------|-----------------|----------|
| PI | WO 2000071590 | A1 | 20001130 | WO 2000-US14009 | 20000519 |
| | W: CU, JP | | | | |
| | RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE | | | | |
| | EP 1189953 | A1 | 20020327 | EP 2000-936159 | 20000519 |
| | EP 1189953 | B1 | 20040714 | | |
| | R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI | | | | |
| | JP 2003500495 | T2 | 20030107 | JP 2000-619980 | 20000519 |
| PRAI | US 1999-135074P | P | 19990520 | | |
| | WO 2000-US14009 | W | 20000519 | | |

CLASS

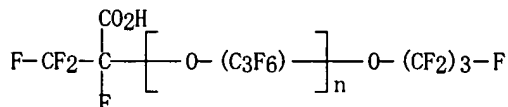
| PATENT NO. | CLASS | PATENT FAMILY CLASSIFICATION CODES |
|------------|-------|------------------------------------|
|------------|-------|------------------------------------|

| | | |
|---------------|-----|------------|
| WO 2000071590 | ICM | C08F014-18 |
|---------------|-----|------------|

AB Aqueous dispersion polymerization of fluoromonomers is improved by using a combination of fluorosurfactants, one of which is a perfluoropolyether carboxylic acid or salt. In an example, hexafluoropropylene is copolymerized with tetrafluoroethylene in water containing Zonyl FS-62 (sulfo) and Krytox 157 FSH (carboxy) surfactants. Reaction time was reduced by incorporation of the second surfactant.

ST dispersion polymn fluoromonomer carboxylated fluorosurfactant; fluoropolymer prepn aq carboxylated fluorosurfactant

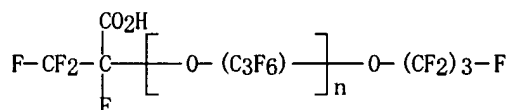
- IT **Surfactants**
(anionic; aqueous dispersion polymerization of fluoromonomers using fluorinated anionic surfactants)
- IT Polymerization
(dispersion, radical; aqueous dispersion polymerization of fluoromonomers using fluorinated anionic surfactants)
- IT Polyethers, uses
Polyoxyalkylenes, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(fluorine-containing, surfactants; aqueous dispersion polymerization of fluoromonomers using fluorinated anionic surfactants)
- IT Fluoropolymers, preparation
RL: IMF (Industrial manufacture); PREP (Preparation)
(from aqueous dispersion polymerization of fluoromonomers using fluorinated anionic surfactants)
- IT Fluoropolymers, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(polyether-, surfactants; aqueous dispersion polymerization of fluoromonomers using fluorinated anionic surfactants)
- IT Fluoropolymers, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(polyoxyalkylene-, surfactants; aqueous dispersion polymerization of fluoromonomers using fluorinated anionic surfactants)
- IT 9002-84-0P, PTFE 25067-11-2P, Hexafluoropropylene-tetrafluoroethylene copolymer 26425-79-6P, Perfluoro(methyl vinyl ether)-tetrafluoroethylene copolymer 31784-04-0P, Perfluoro(ethyl vinyl ether)-tetrafluoroethylene copolymer 63654-40-0P, Hexafluoropropylene-perfluoro(ethyl vinyl ether)-tetrafluoroethylene copolymer 204270-08-6P, Perfluoro(ethyl vinyl ether)-perfluoro(methyl vinyl ether)-tetrafluoroethylene copolymer
RL: IMF (Industrial manufacture); PREP (Preparation)
(from aqueous dispersion polymerization of fluoromonomers using fluorinated anionic surfactants)
- IT 3825-26-1, Ammonium perfluorooctanoate 27619-97-2 **90317-74-1**
111019-20-6, Zonyl TBS 120895-92-3, Demnum SH 196623-59-3, Fluorolink C
RL: TEM (Technical or engineered material use); USES (Uses)
(surfactant; aqueous dispersion polymerization of fluoromonomers using fluorinated anionic surfactants)
- RE. CNT 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD
- RE
(1) Ausimont Spa; EP 0771823 A 1997 HCAPLUS
(2) Du Pont; EP 0006346 A 1980 HCAPLUS
(3) Du Pont; EP 0248446 A 1987 HCAPLUS
(4) Gore & Ass; WO 9622313 A 1996 HCAPLUS
- IT **90317-74-1**
RL: TEM (Technical or engineered material use); USES (Uses)
(surfactant; aqueous dispersion polymerization of fluoromonomers using fluorinated anionic surfactants)
- RN 90317-74-1 HCAPLUS
- CN Poly[oxy(trifluoro(trifluoromethyl)-1,2-ethanediyl)], α -(1-carboxy-1,2,2,2-tetrafluoroethyl)- ω -(heptafluoropropoxy)- (9CI) (CA INDEX NAME)



- L24 ANSWER 16 OF 23 HCAPLUS COPYRIGHT 2005 ACS on STN
- AN 2000:790851 HCAPLUS
- DN 134:71961
- ED Entered STN: 12 Nov 2000
- TI Free Radical Polymerization of Methyl Methacrylate in Supercritical Carbon Dioxide Using a Pseudo-Graft Stabilizer: Effect of Monomer, Initiator, and Stabilizer Concentrations
- AU Christian, Paul; Giles, Matthew R.; Griffiths, Rhiannon M. T.; Irvine, Derek J.; Major, Richard C.; Howdle, Steven M.

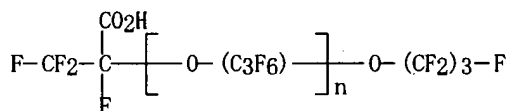
- CS School of Chemistry, University of Nottingham, Nottingham, NG7 2RD, UK
 SO Macromolecules (2000), 33(25), 9222-9227
 CODEN: MAMOBX; ISSN: 0024-9297
 PB American Chemical Society
 DT Journal
 LA English
 CC 35-4 (Chemistry of Synthetic High Polymers)
 AB This paper describes the free radical polymerization of Me methacrylate (MMA) in supercrit. carbon dioxide (scCO₂) using a com. available acid-terminated perfluoropolyether (Krytox 157FSL) as a polymerization stabilizer. We have investigated the effect of varying the concns. of monomer, initiator, and stabilizer upon the mol. weight and morphol. of the resultant poly(Me methacrylate). The results obtained are compared to those observed for other stabilizers used for polymerization in scCO₂. Krytox 157 FSL is shown to be an effective stabilizer leading to discrete spherical particles with diams. in the range expected from dispersion polymerization. Unusual morphologies are observed at high initiator concentration and at lower stabilizer concentration. Surprisingly, high yields of polymer are still formed even at very low concns. of stabilizer near 10⁻⁴ wt% with respect to monomer.
- ST Me methacrylate polymn supercrit carbon dioxide dispersion stabilizer;
 morphol polymethyl methacrylate stabilizer supercrit carbon dioxide
- IT **Dispersing agents**
 Particle size distribution
 Polymer morphology
 (effect of monomer, initiator, and stabilizer concns. on the free radical polymerization of me methacrylate in supercrit. carbon dioxide using a pseudo-graft stabilizer)
- IT Polyethers, uses
 RL: NUU (Other use, unclassified); USES (Uses)
 (perfluoro; effect of monomer, initiator, and stabilizer concns. on the free radical polymerization of me methacrylate in supercrit. carbon dioxide using a pseudo-graft stabilizer)
- IT. Fluoropolymers, uses
 RL: NUU (Other use, unclassified); USES (Uses)
 (polyether-; effect of monomer, initiator, and stabilizer concns. on the free radical polymerization of me methacrylate in supercrit. carbon dioxide using a pseudo-graft stabilizer)
- IT Polymerization catalysts
 (radical; effect of monomer, initiator, and stabilizer concns. on the free radical polymerization of me methacrylate in supercrit. carbon dioxide using a pseudo-graft stabilizer)
- IT Solvents
 (supercrit.; effect of monomer, initiator, and stabilizer concns. on the free radical polymerization of me methacrylate in supercrit. carbon dioxide using a pseudo-graft stabilizer)
- IT **90317-74-1, Krytox 157FSL**
 RL: NUU (Other use, unclassified); USES (Uses)
 (dispersion stabilizer; effect of monomer, initiator, and stabilizer concns. on the free radical polymerization of me methacrylate in supercrit. carbon dioxide using a pseudo-graft stabilizer)
- IT 9011-14-7P, Poly(methyl methacrylate)
 RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
 (effect of monomer, initiator, and stabilizer concns. on the free radical polymerization of Me methacrylate in supercrit. carbon dioxide using a pseudo-graft stabilizer)
- IT 78-67-1, AIBN
 RL: CAT (Catalyst use); USES (Uses)
 (effect of monomer, initiator, and stabilizer concns. on the free radical polymerization of me methacrylate in supercrit. carbon dioxide using a pseudo-graft stabilizer)
- IT 124-38-9, Carbon dioxide, uses
 RL: NUU (Other use, unclassified); USES (Uses)
 (effect of monomer, initiator, and stabilizer concns. on the free radical polymerization of me methacrylate in supercrit. carbon dioxide using a pseudo-graft stabilizer)
- RE. CNT 24 THERE ARE 24 CITED REFERENCES AVAILABLE FOR THIS RECORD
- RE
 (1) Barrett, K; Dispersion Polymerisation in Organic Media 1975
 (2) Buback, M; J Supercrit Fluids 1995, V8, P119 HCAPLUS
 (3) Canelas, D; Macromolecules 1996, V29, P2818 HCAPLUS

- (4) Canelas, D; Macromolecules 1997, V30, P5673 HCAPLUS
 (5) Christian, P; Macromolecules 2000, V33, P237 HCAPLUS
 (6) Christian, P; Polymer 2000, V41, P1251 HCAPLUS
 (7) Desimone, J; Science 1994, V265, P356 HCAPLUS
 (8) Giles, M; Macromolecules 2000, V33, P1996 HCAPLUS
 (9) Giles, M; Polymer 2000, V41, P1251
 (10) Handa, P; J Polym Sci, Part B: Polym Phys 1996, V34, P2635
 (11) Howdle, S; Chemical Synthesis Using Supercritical Fluids 1999, P147 HCAPLUS
 (12) Howdle, S; NATO Advanced Study Institute "Supercritical Fluids-Fundamentals for Application 1994, V273, P527 HCAPLUS
 (13) Hsiao, Y; Macromolecules 1995, V28, P8159 HCAPLUS
 (14) Kendall, J; Chem Rev 1999, V99, P543 HCAPLUS
 (15) Lepilleur, C; Macromolecules 1997, V30, P745 HCAPLUS
 (16) Lora, M; Fluid Phase Equilib 1999, V157, P285 HCAPLUS
 (17) McHugh, M; Supercritical Fluid Extraction: Principles and Practice 1994
 (18) O'Neill, M; Macromolecules 1998, V31, P2838 HCAPLUS
 (19) O'Neill, M; Macromolecules 1998, V31, P2848 HCAPLUS
 (20) Poliakoff, M; Angew Chem, Int Ed Engl 1995, V34, P1275 HCAPLUS
 (21) Shaffer, K; Macromolecules 1996, V29, P2704 HCAPLUS
 (22) Sudol, D; Polymeric Dispersions: Principles and Applications 1997, P141
 (23) Ute, K; Polymer 1995, V37, P1415
 (24) Yong, T; Chem Commun 1997, P1811 HCAPLUS
 IT 90317-74-1, Krytox 157FSL
 RL: NUU (Other use, unclassified); USES (Uses)
 (dispersion stabilizer; effect of monomer, initiator, and stabilizer concns. on the free radical polymerization of me methacrylate in supercrit. carbon dioxide using a pseudo-graft stabilizer)
 RN 90317-74-1 HCAPLUS
 CN Poly[oxy(trifluoro(trifluoromethyl)-1,2-ethanediyl)], α -(1-carboxy-1,2,2,2-tetrafluoroethyl)- ω -(heptafluoropropoxy)- (9CI) (CA INDEX NAME)



- L24 ANSWER 17 OF 23 HCAPLUS COPYRIGHT 2005 ACS on STN
 AN 1997:470691 HCAPLUS
 DN 127:196690
 ED Entered STN: 26 Jul 1997
 TI Enhanced removal of radioactive particles from circuit boards by fluorinated surfactant solutions
 AU Yam, C. S.; Kaiser, R.; Harling, O. K.
 CS Dep. Nuclear Eng., Mass. Inst. Technol., Cambridge, MA, 02139, USA
 SO Proceedings of the Annual Meeting of the Adhesion Society (1995), 18th, 62-65
 CODEN: PAMSFE; ISSN: 1086-9506
 PB Adhesion Society
 DT Journal
 LA English
 CC 71-10 (Nuclear Technology)
 Section cross-reference(s): 76
 AB A laboratory scale ultrasonic decontamination system was developed for electronic circuit boards by using fluorinated surfactants. Particle removal capability of the perfluorinated liquid is better than that of CFC-113. Enhanced removal is obtained by adding 0.3 weight% of perfluorinated surfactant. High decontamination factors > 1000 are obtained in 1 h and removal rate after 1 h is >0. The cleaning process is nondestructive to electronic circuit boards. The process is cost effective and can be used for a wide variety of decontamination needs.
 ST electronic circuit radioactive decontamination fluorinated surfactant
 IT Perfluorocarbons
 RL: NUU (Other use, unclassified); USES (Uses)
 (Vertrel; enhanced removal of radioactive particles from circuit boards by fluorinated surfactant solns.)

- IT Printed circuit boards
Radioactive decontamination
(enhanced removal of radioactive particles from circuit boards by fluorinated surfactant solns.)
- IT **Surfactants**
(fluorosurfactants; enhanced removal of radioactive particles from circuit boards by fluorinated surfactant solns.)
- IT **90317-74-1**, Krytox 157FS(L)
RL: MOA (Modifier or additive use); NUU (Other use, unclassified); USES (Uses)
(enhanced removal of radioactive particles from circuit boards by fluorinated surfactant solns.)
- IT 335-57-9, Pf-5070
RL: NUU (Other use, unclassified); USES (Uses)
(enhanced removal of radioactive particles from circuit boards by fluorinated surfactant solns.)
- RE. CNT 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD
- RE
(1) Kaiser, R; US 4711256 1987
(2) Kaiser, R; Draft Final Report NRC-04-92-109, Prepared for U S Nuclear Regulatory Commission 1993, NUREG/CG 6081
(3) Kaiser, R; Particles on Surface 4: Detection, Adhesion and Removal 1993
- IT **90317-74-1**, Krytox 157FS(L)
RL: MOA (Modifier or additive use); NUU (Other use, unclassified); USES (Uses)
(enhanced removal of radioactive particles from circuit boards by fluorinated surfactant solns.)
- RN 90317-74-1 HCAPLUS
- CN Poly[oxy(trifluoro(trifluoromethyl)-1,2-ethanediyl)], α -(1-carboxy-1,2,2,2-tetrafluoroethyl)- ω -(heptafluoropropoxy)- (9CI) (CA INDEX NAME)



- L24 ANSWER 18 OF 23 HCAPLUS: COPYRIGHT 2005 ACS on STN
- AN 1995:262021 HCAPLUS
- DN 123:33744
- ED Entered STN: 24 Dec 1994
- TI Inverse emulsion polymerization of acrylamide in supercritical carbon dioxide. [Erratum to document cited in CA120:55125]
- AU Adamsky, F. A.; Beckman, E. J.
- CS Dep. Chem. Eng., Univ. Pittsburgh, Pittsburgh, PA, 15261, USA
- SO Macromolecules (1994), 27(18), 5238
CODEN: MAMOBX; ISSN: 0024-9297
- PB American Chemical Society
- DT Journal
- LA English
- CC 35-4 (Chemistry of Synthetic High Polymers)
Section cross-reference(s): 46
- AB The errors were not reflected in the abstract or the index entries.
- ST erratum inverse emulsion polymn acrylamide surfactant; inverse emulsion polymn acrylamide surfactant erratum; supercrit carbon dioxide acrylamide polymn erratum
- IT **Surfactants**
(fluorinated, preparation of, for inverse emulsion polymerization of acrylamide in supercrit. carbon dioxide (Erratum))
- IT Polymerization
(inverse emulsion, of acrylamide in supercrit. carbon dioxide, fluorinated surfactant for (Erratum))
- IT 124-38-9, Carbon dioxide, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(inverse emulsion polymerization of acrylamide in (Erratum))
- IT **90999-75-0P**
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT

(Reactant or reagent)

(preparation and amidation of (Erratum))

IT **53789-69-8P**

RL: SPN (Synthetic preparation); PREP (Preparation)

(preparation of, for surfactants for inverse emulsion polymerization of acrylamide in supercrit. carbon dioxide (Erratum))

IT 9003-05-8P

RL: SPN (Synthetic preparation); PREP (Preparation)

(preparation of, in inverse emulsion in supercrit. carbon dioxide, fluorinated surfactant for (Erratum)).

IT **90317-74-1**

RL: RCT (Reactant); RACT (Reactant or reagent)

(reaction with thionyl chloride of (Erratum))

IT 25038-02-2DP, Hexafluoropropylene oxide homopolymer, amide group-terminated

RL: SPN (Synthetic preparation); PREP (Preparation)

(surfactants, for inverse emulsion polymerization of acrylamide in supercrit. carbon dioxide (Erratum))

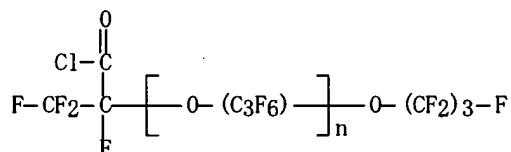
IT **90999-75-0P**

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT

(Reactant or reagent)

(preparation and amidation of (Erratum))

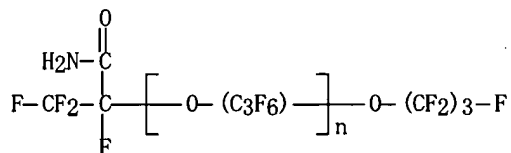
RN 90999-75-0 HCAPLUS

CN Poly[oxy(trifluoro(trifluoromethyl)-1,2-ethanediyl)], α -[1-(chlorocarbonyl)-1,2,2,2-tetrafluoroethyl]- ω -(heptafluoropropoxy)-(9CI) (CA INDEX NAME)IT **53789-69-8P**

RL: SPN (Synthetic preparation); PREP (Preparation)

(preparation of, for surfactants for inverse emulsion polymerization of acrylamide in supercrit. carbon dioxide (Erratum))

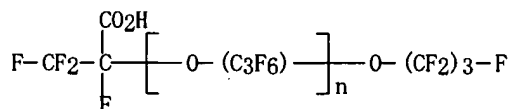
RN 53789-69-8 HCAPLUS

CN Poly[oxy(trifluoro(trifluoromethyl)-1,2-ethanediyl)], α -[1-(aminocarbonyl)-1,2,2,2-tetrafluoroethyl]- ω -(heptafluoropropoxy)-(9CI) (CA INDEX NAME)IT **90317-74-1**

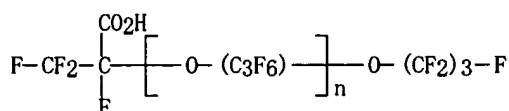
RL: RCT (Reactant); RACT (Reactant or reagent)

(reaction with thionyl chloride of (Erratum))

RN 90317-74-1 HCAPLUS

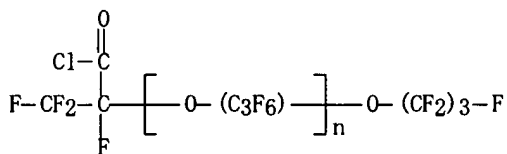
CN Poly[oxy(trifluoro(trifluoromethyl)-1,2-ethanediyl)], α -(1-carboxy-1,2,2,2-tetrafluoroethyl)- ω -(heptafluoropropoxy)-(9CI) (CA INDEX NAME)

L24 ANSWER 19 OF 23 HCAPLUS COPYRIGHT 2005 ACS on STN
 AN 1995:5307 HCAPLUS
 DN 122:12529
 ED Entered STN: 08 Nov 1994
 TI Phase behavior of fluoroether-functional amphiphiles in supercritical carbon dioxide
 AU Newman, D. A.; Hoefling, T. A.; Beitle, R. R.; Beckman, E. J.; Enick, R. M.
 CS Dep. Chem. Eng., Univ. Pittsburgh, Pittsburgh, PA, 15261, USA
 SO Journal of Supercritical Fluids (1993), 6(4), 205-10
 CODEN: JSFLEH; ISSN: 0896-8446
 DT Journal
 LA English
 CC 46-3 (Surface Active Agents and Detergents)
 AB Results with Krytox 157-based fluoroether-functional amphiphiles show that solubility is possible in supercrit. CO₂. Apparently, there are several competing effects that determine the solubility of these materials in CO₂: increasing mol. weight tends to drive the cloud-point curve to higher pressures, yet, addition of CO₂-philic fluoroether groups and branching of the CO₂-philic tails works to depress the cloud-point curve to lower pressures. Further, increasing the polarity of the polar head group induces the cloud-point curve to move to higher pressures. Fluoroether-functional amphiphiles permit extraction of thymol blue from aqueous solution into CO₂.
 ST surfactant anionic fluoropolymer polyether; supercrit carbon dioxide
 IT surfactant soly
 IT Cloud point
 (phase behavior of fluoroether-functional amphiphiles in supercrit. carbon dioxide)
 IT **Surfactants**
 (anionic, phase behavior of fluoroether-functional amphiphiles in supercrit. carbon dioxide)
 IT Polyethers, preparation
 RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
 (carboxy- and fluorine-containing, salts; phase behavior of fluoroether-functional amphiphiles in supercrit. carbon dioxide)
 IT Fluoropolymers
 RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
 (polyether-, carboxy-containing, salts; phase behavior of fluoroether-functional amphiphiles in supercrit. carbon dioxide)
 IT 124-38-9, Carbon dioxide, properties
 RL: PRP (Properties)
 (phase behavior of fluoroether-functional amphiphiles in supercrit. carbon dioxide)
 IT 154-42-7DP, 2-Aminopurine-6-thiol, salts of carboxy-containing fluoropolymer-polyethers 452-06-2DP, 2-Aminopurine, salts of carboxy-containing fluoropolymer-polyethers 61414-25-3DP, salts with carboxy-containing fluoropolymer-polyethers **90317-74-1DP**, Krytox 157FS(L), salts
 RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
 (phase behavior of fluoroether-functional amphiphiles in supercrit. carbon dioxide)
 IT **90317-74-1DP**, Krytox 157FS(L), salts
 RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
 (phase behavior of fluoroether-functional amphiphiles in supercrit. carbon dioxide)
 RN 90317-74-1 HCAPLUS
 CN Poly[oxy(trifluoro(trifluoromethyl)-1,2-ethanediyl)], α -(1-carboxy-1,2,2,2-tetrafluoroethyl)- ω -(heptafluoropropoxy)- (9CI) (CA INDEX NAME)



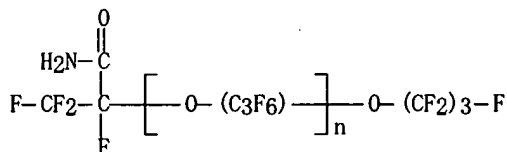
L24 ANSWER 20 OF 23 HCAPLUS COPYRIGHT 2005 ACS on STN

AN 1994:55125 HCAPLUS
 DN 120:55125
 ED Entered STN: 05 Feb 1994
 TI Inverse emulsion polymerization of acrylamide in supercritical carbon dioxide
 AU Adamsky, F. A.; Beckman, E. J.
 CS Dep. Chem. Eng., Univ. Pittsburgh, Pittsburgh, PA, 15261, USA
 SO Macromolecules (1994), 27(1), 312-14
 CODEN: MAMOBX; ISSN: 0024-9297
 DT Journal
 LA English
 CC 35-4 (Chemistry of Synthetic High Polymers)
 Section cross-reference(s): 46
 AB Inverse emulsion polymerization of acrylamide was performed using supercrit. CO₂ as the continuous phase to produce ultra-high mol.-weight linear homopolymer. A new surfactant, highly soluble in supercrit. CO₂, was synthesized to create the inverse emulsions. Data are presented for both surfactant and homopolymer characterization.
 ST inverse emulsion polymn acrylamide surfactant; supercrit carbon dioxide acrylamide polymn
 IT **Surfactants**
 (fluorinated, preparation of, for inverse emulsion polymerization of acrylamide in supercrit. carbon dioxide)
 IT Polymerization
 (inverse emulsion, of acrylamide in supercrit. carbon dioxide, fluorinated surfactant for)
 IT 124-38-9, Carbon dioxide, reactions
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (inverse emulsion polymerization of acrylamide in)
 IT **90999-75-0P**
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
 (preparation and amidation of)
 IT **53789-69-8P**
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (preparation of, for surfactants for inverse emulsion polymerization of acrylamide in supercrit. carbon dioxide)
 IT 9003-05-8P, Polyacrylamide
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (preparation of, in inverse emulsion in supercrit. carbon dioxide, fluorinated surfactant for)
 IT **90317-74-1**
 RL: USES (Uses)
 (reaction with thionyl chloride of)
 IT 25038-02-2D, Hexafluoropropylene oxide homopolymer, amide group-terminated
 RL: USES (Uses)
 (surfactants, for inverse emulsion polymerization of acrylamide in supercrit. carbon dioxide)
 IT **90999-75-0P**
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
 (preparation and amidation of)
 RN 90999-75-0 HCAPLUS
 CN Poly[oxy(trifluoro(trifluoromethyl)-1,2-ethanediyl)], α -[1-(chlorocarbonyl)-1,2,2-tetrafluoroethyl]- ω -(heptafluoropropoxy)-(9CI) (CA INDEX NAME)

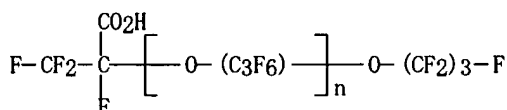


IT **53789-69-8P**
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (preparation of, for surfactants for inverse emulsion polymerization of acrylamide in supercrit. carbon dioxide)

RN 53789-69-8 HCAPLUS
 CN Poly[oxy(trifluoro(trifluoromethyl)-1,2-ethanediyl)], α -[1-(aminocarbonyl)-1,2,2,2-tetrafluoroethyl]- ω -(heptafluoropropoxy)-(9CI) (CA INDEX NAME)

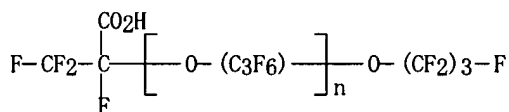


IT **90317-74-1**
 RL: USES (Uses)
 (reaction with thionyl chloride of)
 RN 90317-74-1 HCAPLUS
 CN Poly[oxy(trifluoro(trifluoromethyl)-1,2-ethanediyl)], α -(1-carboxy-1,2,2,2-tetrafluoroethyl)- ω -(heptafluoropropoxy)-(9CI) (CA INDEX NAME)



L24 ANSWER 21 OF 23 HCAPLUS COPYRIGHT 2005 ACS on STN
 AN 1991:663987 HCAPLUS
 DN 115:263987
 ED Entered STN: 14 Dec 1991
 TI Surface activity of fluorine-containing surfactants in polar solvents and water-organic mixtures
 AU Sharovarnikov, A. F.; Teplov, G. S.
 CS Vysshaya Inzh. Pozharno-Tekhnol. Shk., Moscow, USSR
 SO Kolloidnyi Zhurnal (1991), 53(5), 949-54
 CODEN: KOZHAG; ISSN: 0023-2912
 DT Journal
 LA Russian
 CC 66-1 (Surface Chemistry and Colloids)
 Section cross-reference(s): 46
 AB The surface active properties of RFC(O)R' (derivs. of perfluoroaliph. acids (F(CF₂)_nCOOH), monochloroperfluoroaliph. acids (ClCF₂)_nCOOH), CF₃(CF₂)₂₀(CF(CF₃)CF₂₀)_n(CF(CF₃)COOH (I), and [RF C(O)NH(C₃H₆)NMe₂R']_X (X = halide; RF = fluorine-containing radical; R' = unfluorinated N-containing radical, OH, or cation; R'' = H, Me, Et, EtO, OAc, (MeO)SO₃) were studied in alc. or aqueous alc. solns. Compds. of type I exhibit surface activity in both aqueous and neat alc. solns. The free energy of transfer of 1 CH₂ or 1 CF₂ group from bulk solvent to the micella phase was calculated from the dependence of the cmc. of I in EtOH on the number of CF(CF₃)CF₂₀ links in the mol.
 ST fluorine contg surfactant surface activity alc
 IT Micelles
 (critical concentration of, in fluorine-containing surfactant solns. in alcs. or aqueous alcs.)
 IT Amides, properties
 RL: PRP (Properties)
 (fluoroalkyl, surface activity of, in alcs. or aqueous alcs.)
 IT **Surface activity**
 (of fluorine-containing surfactants, in alcs. or aqueous alcs.)
 IT Free energy
 (of transfer, of fluoromethylene group between micelles and neat ethanol phase)
 IT Quaternary ammonium compounds, properties
 RL: PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process)
 (surface activity of, in alcs. or aqueous alcs.)

- IT Perfluoro compounds
RL: PEP (Physical, engineering or chemical process); PRP (Properties);
PROC (Process)
(carboxylic acids, surface activity of, in alcs. or aqueous alcs.)
- IT Carboxylic acids, properties
RL: PEP (Physical, engineering or chemical process); PRP (Properties);
PROC (Process)
(perfluoro, surface activity of, in alcs. or aqueous alcs.)
- IT 64-17-5, Ethanol, properties 67-63-0, 2-Propanol, properties 71-36-3,
Butyl alcohol, properties
RL: PRP (Properties)
(surface activity in, of fluorine-containing surfactants)
- IT 16432-82-9 69306-54-3 **90317-74-1** 137476-16-5 137476-17-6
137476-18-7
RL: PEP (Physical, engineering or chemical process); PRP (Properties);
PROC (Process)
(surface activity of, in alcs. or aqueous alcs.)
- IT **90317-74-1**
RL: PEP (Physical, engineering or chemical process); PRP (Properties);
PROC (Process)
(surface activity of, in alcs. or aqueous alcs.)
- RN 90317-74-1 HCAPLUS
- CN Poly[oxy(trifluoro(trifluoromethyl)-1,2-ethanediyl)], α -(1-carboxy-
1,2,2,2-tetrafluoroethyl)- ω -(heptafluoropropoxy)- (9CI) (CA INDEX
NAME)



L24 ANSWER 22 OF 23 HCAPLUS COPYRIGHT 2005 ACS on STN

AN 1987:432064 HCAPLUS

DN 107:32064

ED Entered STN: 25 Jul 1987

TI Magnetic fluid

IN Sugano, Takao

PA NOK Corp., Japan

SO Jpn. Kokai Tokkyo Koho, 4 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM H01F001-12

ICS C10M169-04

ICA C09K003-10

ICI C10M169-04, C10M105-54, C10M125-10; C10N040-14

CC 77-8 (Magnetic Phenomena)

FAN. CNT 1

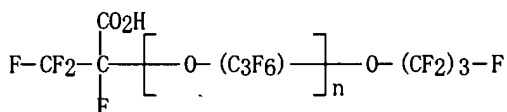
| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------|----------------|------|----------|-----------------|----------|
| PI | JP 61263202 | A2 | 19861121 | JP 1985-103697 | 19850517 |
| | JP 04076484 | B4 | 19921203 | | |
| PRAI | JP 1985-103697 | | 19850517 | | |

CLASS

| PATENT NO. | CLASS | PATENT FAMILY CLASSIFICATION CODES |
|-------------|-------|------------------------------------------------|
| JP 61263202 | ICM | H01F001-12 |
| | ICS | C10M169-04 |
| | ICA | C09K003-10 |
| | ICI | C10M169-04, C10M105-54, C10M125-10; C10N040-14 |

AB A magnetic fluid having a good dispersion stability consists of magnetic fine powders dispersed in perfluoroether-type base oil using a perfluoroether-type surfactant as a dispersing agent. A method for the preparation of the fluid involves the following steps: (1) preparing an organic-solvent suspension of the magnetic powders from an aqueous suspension which has been prepared by a wet method; (2) adding the perfluoroether-type surfactant and base oil; and (3) removing the organic solvent.

ST perfluoroether surfactant dispersion agent ferrofluid
 IT Ferrofluids
 (perfluoroether surfactant as dispersion agents for)
 IT **Dispersing agents**
 Surfactants
 (perfluoroethers, for magnetic fluids)
 IT Polyethers, uses and miscellaneous
 RL: PRP (Properties)
 (perfluoro, surfactants, as dispersion agents for magnetic fluids)
 IT Perfluoro compounds
 RL: PRP (Properties)
 (polyethers, surfactants, as dispersion agents for magnetic fluids)
 IT 52700-35-3
 RL: PRP (Properties)
 (magnetic fluids containing base oils of, dispersion agent for)
 IT **90317-74-1** 108072-64-6
 RL: PRP (Properties)
 (surfactants, as dispersion agents for magnetic fluids)
 IT **90317-74-1**
 RL: PRP (Properties)
 (surfactants, as dispersion agents for magnetic fluids)
 RN 90317-74-1 HCAPLUS
 CN Poly[oxy(trifluoro(trifluoromethyl)-1,2-ethanediyl)], α -(1-carboxy-1,2,2,2-tetrafluoroethyl)- ω -(heptafluoropropoxy)- (9CI) (CA INDEX NAME)



L24 ANSWER 23 OF 23 HCAPLUS COPYRIGHT 2005 ACS on STN
 AN 1972:406026 HCAPLUS
 DN 77:6026
 ED Entered STN: 12 May 1984
 TI Esters of hexafluoropropylene oxide polymer acids and polyalkylene glycols
 IN Bartlett, Philip L.
 PA du Pont de Nemours, E. I., and Co.
 SO U.S., 4 pp.
 CODEN: USXXAM
 DT Patent
 LA English
 IC C07C
 INCL 260484000R
 CC 35-3 (Synthetic High Polymers)
 FAN. CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------|----------------|------|----------|-----------------|----------|
| PI | US 3644492 | A | 19720222 | US 1969-846238 | 19690730 |
| PRAI | US 1969-846238 | A | 19690730 | | |

CLASS

| PATENT NO. | CLASS | PATENT FAMILY CLASSIFICATION CODES |
|------------|-------|----------------------------------------------------|
| US 3644492 | IC | C07C |
| | INCL | 260484000R |
| US 3644492 | NCL | 560/184.000; 516/074.000; 562/586.000; 562/849.000 |

AB The esters (I, R1 = perfluoropropyl, n = 1-36, R2 = ethylene or propylene radical, R3, R4, R5 = H or Me, and x = 5-45) were prepared by treating an acid fluoride with a polyalkylene glycol in the presence of an acid acceptor; an acyl fluoride-polyalkylene glycol adduct with an alkylene oxide; or a fluorocarboxylic acid with an alkylene oxide. I were useful in fire fighting and permitted the spreading of a film of water or foam on the surface of a liquid hydrocarbon. Thus, CF₃(CF₂)₂₀[CF(CF₃)CF₂O]₈CF(CF₃)COF was mixed with 1,1,2-trichloro-1,2,2-trifluoroethane (II), triethylamine, Carbowax-350 [heptakis(ethylene glycol) monomethyl ether] [4437-01-8], and addnl. II, to give I (R1 = CF₃CF₂CF₂, n = 8, R2 = CH₂CH₂, R3 = R4 = R5 = H, x = 6) [34834-37-2] used in H₂O emulsions.

ST perfluoropropylene oxide polyesterification; polyalkylene glycol
polyesterification; fluoropropylene oxide polyesterification; emulsifier
fluoro polyester; fire extinguishing emulsions

IT Fire
(extinguishing of, fluorinated polyesters for use in)

IT Esters, preparation
RL: PREP (Preparation)
(of fluorinated, as emulsifiers and surfactants)

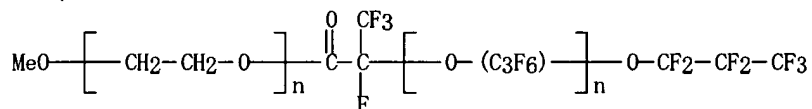
IT **Emulsifying agents**
Surfactants
(polyalkylene glycol esters of fluorinated carboxylic acids as)

IT 37208-48-3 **37208-51-8** 37208-52-9 37494-04-5 37503-46-1
37541-11-0 37541-12-1 37871-32-2 37871-33-3
RL: USES (Uses)
(emulsifiers and surfactants)

IT **37208-51-8**
RL: USES (Uses)
(emulsifiers and surfactants)

RN 37208-51-8 HCAPLUS

CN Poly[oxy(trifluoro(trifluoromethyl)-1,2-ethanediyl)], α -(1-carboxy-
1,2,2,2-tetrafluoroethyl)- ω -(heptafluoropropoxy)-, ester with
 α -hydro- ω -methoxypoly(oxy-1,2-ethanediyl) (9CI) (CA INDEX
NAME)



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